THE RELATIONSHIP BETWEEN TRAINING STYLE AND PERSONALITY

by

LOUISE CHRISTINE ENGELBRECHT

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PROMOTORS: PROF. J. DU TOIT
DR. C.C. THERON

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"In spite of the fact that educators have recognised that a child is not simply a small adult, it has apparently been with greater difficulty that they understand that an adult is not merely a large child."

- Eunice Shead Newton, 1977, p. 361-

Dedicated to my parents,

Louis and Christina

DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

Louise C. Engelbrecht

May 2000

ABSTRACT

This study was prompted by two significant aspects within the South African training field. Firstly, the attitude of the South African Government towards training in terms of legislation made it evident that trainers will progressively play a more important role in organisations. Secondly, although literature regard the trainer as one of the important role-players in the training situation, no substantial research has been done on training style as an aspect that can influence the trainer's performance and ultimately the effectiveness of training.

In order to address this void, the research was dedicated to determine whether a systematic relationship exists between the personality of a trainer and his/her training style. The following topics were examined by means of a selective study of the literature: adult learners as the target of training programmes; pedagogy and andragogy as orientations to training; the trainer; the definition of training style; the trait theory of personality as the basis of the study; and empirical studies done on the topic prior to this study.

In order to gather the necessary information, three questionnaires were administered to a sample of 96 trainers. The 16-PF, which is an established questionnaire, was used to collect data about the personality traits of the respondents. Furthermore, a questionnaire namely the Training Style Inventory was developed to measure the training style of trainers. Trainers were then accordingly grouped in one of five types of training styles. The last questionnaire gathered information regarding demographic aspects of the sample.

The study found limited support for the hypothesis that there exists a systematic relationship between personality and training style. However, it was found that certain dimensions of personality do play a role in the manifestation of a certain training style.

OPSOMMING

Hierdie studie was geinspireer deur twee opmerklike aspekte binne die Suid-Afrikaanse opleidingsveld. Eerstens, die Suid-Afrikaanse Regering se houding jeens opleiding in terme van wetgewing, het dit duidelik gemaak dat opleiers voortaan 'n toenemend belangrike rol in organisasies sal vervul. Ten tweede het navorsing reeds bevestig dat die opleier een van die belangrike rolspelers in die opleiding situasie is. Daar is egter tot op hede geen noemenswaardige navorsing gedoen op opleidingstyl as 'n aspek wat die werkverrigting van die opleier en uiteindelik die effektiwiteit van opleiding beïnvloed nie.

Ten einde hierdie leemte aan te spreek, was die doel van hiedie navorsing om te bepaal of daar 'n sistematiese verband bestaan tussen die persoonlikheid van 'n opleier en sy/haar opleidingstyl. Deur middel van selektiewe literatuurstudie is die volgende ondersoek: die volwasse leerder as die teiken van opleidingsprogramme; pedagogie en andragogie as orientasies tot opleiding; die opleier; definiering van opleidingstyl; die trekteorie van persoonlikheid as die basis van die studie; en empiriese studies oor die onderwerp wat hierdie navorsing vooraf gegaan het.

Om die nodige inligting in te samel is drie vraelyste deur 'n steekproef van 96 opleiers ingevul. Die 16-PF wat as 'n gevestigde meetinstrument bekend staan, is gebruik om inligting in te samel oor die persoonlikheidstrekke van die respondente. Voorts is 'n vraelys naamlik die Training Style Inventory ontwikkel om die opleidingstyl van die opleiers te meet. Opleiers is daarna ooreenkomstig gegroepeer in een van vyf opleidingstyle. Die laaste vraelys het inligting ingesamel aangaande die demografiese aspekte van die steekproef.

Die studie het beperkte steun gevind vir die hipotese dat daar 'n verwantskap bestaan tussen persoonlikheid en opleidingstyl. Daar is

egter gevind dat sekere dimensies van persoonlikheid wel 'n rol speel in die verklaring van die manifestering van 'n sekere opleidingstyl.

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CHAPTER 1

INTRODUCTION

1.1 Motivation for the study

In South Africa there is a noticeable increase in the number of adults engaging in a variety of learning activities (Jacobs, 1989), which are commonly structured as training courses. One reason for this increase in adult learners, is the South African Government's attitude towards training. The Government's decision to establish the National Skills Authority (NSA) and Sector Education and Training Authorities (SETA's), follows from the enormous backlog that South African workers currently have in the field of training (Swart, 1997).

The National Skills Authority is central to the training issue in South Africa. On the one hand it is responsible for advising the Minister of Labour on aspects such as a national skills development policy and the allocation of subsidies from the National Skills Fund. On the other hand, it must liase with the SETA's on the national skills development policy and the national skills development strategy. (Republic of South Africa, 1998)

The Sector Education and Training Authorities also play an important role. A SETA must be determined by the Minister of Labour and for the purposes of that determination take the following into account (Republic of South Africa, 1998, p. 8):

"(a) The education and training needs of employers and employees who

(i) use similar materials, processes and technologies;

(ii) make similar products; or

(iii) render similar services;

(b) the potential of the proposed sector for coherent occupational structures and career pathing;

(c) the scope of any national strategies for economic growth and development;

(d) the organisational structures of trade unions, employer organisations and government in closely related sectors;

(e) any consensus that there may be between organised labour, organised employers and relevant government departments as to the definition of any sector; and

(f) the financial and organisational ability of the proposed sector to support a SETA."

The functions of a SETA are clearly explained by the Skills Development Act (Republic of South Africa, 1998). According to this Act, one of the important functions of a SETA is to collect and disburse the skills development levies in its sector. This levy on companies total remuneration will, according to Mr. Tito Mboweni, former minister of labour, encourage the creation of a more stable training culture in South Africa (Beeld, 1997).

In order to ensure that the above-mentioned legislation is implemented gradually, organisations will be required to pay 0.5% of their total remuneration in the form of a skills development levy as from 1 April 2000 (Republic of South Africa, 1999). As from 1 April 2001 a skills development levy of 1% will be the standard requirement (Republic of South Africa, 1999). This skills development levy makes it evident that organisations should, from now on, regard the training of their employees as a definite priority. Thus, if training is one of the activities that the organisation was fray about, it would certainly need to change.

On the other hand, if a levy or any portion thereof remains unpaid on the last day of payment, interest is payable on the outstanding amount. Furthermore, a penalty of 10% of the unpaid amount is payable in addition

to the interest as mention above (Republic of South Africa, 1999). So it becomes clear that organisations can gain in more ways that one by investing in their own employees by means of training.

Therefore, training *will* take place in South African organisations and that is why it is so important to make sure that the training is as effective as possible. Thus, it is necessary to note the various factors that have an impact on the effectiveness of the training. According to Zastrau (1986, p. 26) there are four main factors that influence the output of any training namely:

- **The learning environment.** This component can be defined as all the factors relating to the social factors in which training is conducted such as the physical learning environment, the interpersonal climate between trainees and the organisation climate (Ingalls, 1973).
- **The course content.** This part of the training course describes the selected learning points that trainees must master in order to achieve the course objectives (Zastrau, 1986).
- **The trainees.** A trainee can be identified as a person who uses a certain learning opportunity to improve his/her capabilities so that current as well as future tasks can be executed successfully (Zastrau, 1986).
- **The trainer**. The trainer can be defined as the person who presents the course material and is responsible for the creation of different learning opportunities during the training course (Zastrau, 1986).

1.2 Necessity of the study

For the training to be successful, all of the above-mentioned components must be highly integrated. If there is a problem concerning one of these factors, the success of the training is at risk. With reference to the first

three factors, there is a vast amount of literature available (Knowles, 1970; Ingalls, 1973; Cross, 1981; Craig, 1987; Merriam and Cunningham, 1989; Merriam and Caffarella, 1991; Robinson, 1994). The literature also shows that the last factor, namely the trainer, receives less attention although it is always stated as an influential aspect of the training. A review of this literature shows a definite void concerning the role of the trainer as well as the role and identification of different types of training styles.

Monteith (1987) supports Zastrau (1986) in saying very explicitly that the trainer is one of the factors influencing effective learning in the training situation. It is therefore crucial for companies in South Africa to realise that effective trainers can make an important contribution to the success of training. To make training as effective as possible trainers must be able to present the course material in such a manner that trainees can associate with it. If the trainer has this ability, the process of learning can be so much more effective (Dastoor, 1993).

For training to be effective the trainer is required to facilitate different learning principles in different ways. Therefore, trainers of adult learners can find themselves in situations where the properties of both the andragogical and pedagogical orientations are present (Marshak, 1983). This type of situation is, according to Du Plooy (1991), influenced by two factors namely the difficulty of the training course and the learning ability of the trainee.

The changing nature of these two factors makes it important that trainers have the ability to adapt their training style according to the requirements of the situation. The application of the principles of andragogy and pedagogy while training adult learners, must therefore be dependent on the situation. Unfortunately not all trainers are comfortable in applying the principles of both orientations because of a noticeable preference that surfaces.

The implication is that trainers will sometimes be required to function in their inferior training style (a training style with which they are less comfortable and one that requires more effort) in order to ensure the effectiveness of the training. To assist this process of functioning in an inferior training style, the measurement of personality can play a dual role. Firstly, it is helpful in identifying internal factors that may lead to the manifestation of the preferred training style as well as the inferior training style.

Secondly, the measurement of personality can make an instrumental contribution to the counselling of trainers to function more effectively in their inferior training style. Therefore, finding a systematic relationship between personality and training style during this study will enable organisations to make the selection, counselling and training of trainers more sophisticated and more effective.

1.3 Objectives of the study

The main concern of this research is to address the undeveloped sectors in the field of training. As section 1.2 pointed out, the trainer is the most overlooked aspect within the training situation. Thus, the study focuses on the training style and personality of trainers as neglected areas that need to be investigated in order to be used to the advantage of the trainer as well as organisations.

In view of the lack of information on the training style and personality of trainers, it is necessary to explain the specific objectives of this research:

- The first objective entails the classification of trainers into five identified training styles. The five training styles are based on pedagogical and andragogical orientations and will be measured by means of a self-developed questionnaire.

- Secondly, a personality profile will be constructed for each type of training style. Consequently, this will help to determine the existence of a possible relationship between personality and training style.

1.4 Outline of the study

In order to comply with these objectives, chapter two explains the concepts that are regarded as important to this study. The dynamics that the trainees contribute to the training situation are analysed in terms of the characteristics of adult learners. Related to this is the conceptualisation of the two orientations namely pedagogy and andragogy. Attention is given to the principles of both orientations as well as the process elements involved.

Furthermore, the trainer is discussed as a significant part of this research. A definition is given as well as an overview of the different roles a trainer can fulfil. The training style of a trainer is the next issue that receives attention. The definition of training style is followed by the distinction between training style and instruction. This section concludes with the classification of training styles as identified for the purpose of this research.

Chapter two also deals with personality as one of the major variables investigated in this study. An explanation is given of the broad definition of personality, and this is followed by the specific definition and theory of personality that is applicable to this study. This chapter ends in an overview of empirical studies done on this topic prior to the study.

Chapter three concentrates on the problem formulation of the research. This chapter also highlights the importance of the trainer as well as the impact of the trainer's training style and personality. In addition, it involves the explanation of the effects that result from the lack of attention given to the

role of the trainer. The chapter focuses on current problems relating to training that companies are dealing with, and results in stating the hypothesis that forms the core of this research.

The methodology is described in chapter four and entails the detailed description of the measuring instruments. Furthermore, the sample is described along with the procedure of how the necessary data was obtained. Chapter four concludes with the research design and statistical analysis appropriate for this study.

Chapter five constitutes the presentation of the results of the study. The data is reported and presented in meaningful tables and figures. Furthermore, the statistical hypotheses have been tested, and resulted in the discussion of the findings.

Lastly, chapter six provides a summary of the study as an integrated whole. This is followed by the implications of the study as well as the recommendations for future research.

1.5 Summary

The objective of this study is to give attention to the trainer as one of the important components in the training situation. More specifically, the personality and training style of trainers form the basis of this research. The aim of this chapter is to establish the background and motivation for this research. Furthermore, the necessity for this research, as well as the objectives are discussed, followed by the outline of the rest of the study.

CHAPTER 2

THEORETICAL FRAMEWORK

2.1 Introduction

Training can be regarded as a process of adult learning. In this sense, training encompasses practically all experiences of men and women by which they acquire new knowledge, understanding, skills, values and interests. It is a process that is used by adults for their self-development, both on their own and with others. It is used by institutions of all kinds for the growth and development of their employees, members and clients (Knowles, 1979).

The terms adult learner, trainer and training style are all concepts that stand in a specific relationship to the training process. Thus, chapter two is devoted to the detailed explanation of these relationships as well as the relevance of concepts such as pedagogy, andragogy and personality. This chapter can therefore be described as the theoretical substance of the research.

2.2 The Adult learner

Since adults are the target group for training programmes in organisations, trainers need to know exactly whom they are dealing with. Therefore, this section will deal with defining the term *adult* and a brief explanation of the field of adulthood. The characteristics of adult learners are identified in section 2.3.3 of this chapter. This section explains the principles of the andragogical orientation, which are based on the characteristics of adult learners.

2.2.1 Definition

There is little agreement in adult education literature on what constitutes an adult (Ironside, 1989). Havenga (1987) supports this viewpoint in stating the difficulty to find a satisfactory definition of the term *adult.* This can be ascribed to the fact that a wide range of concepts is invoked when the term 'adult' is used (Rogers, 1986). To demonstrate this problem several conceptualisations on the term *adult* will follow.

2.2.1.1 A stage in the life cycle

Firstly, the term can refer to a stage in the life cycle of the individual that explains the progression from being a child, to becoming a teenager and then an adult. Rogers (1986) claims that people tend to think of an adult in terms of age in an attempt to construct a definition. Unfortunately, no single age can define an adult, even within one society, let alone on a comparative basis.

This is because legal and social responsibilities come into play at different ages in different culture groups and societies. Aspects of adulthood, for example voting, marriage, obtaining credit, driving a vehicle and holding property, all have age-related restrictions applied to them that can differ from one culture and society to another (Ironside, 1989). Therefore, it is difficult to determine at which specific age an individual becomes fully adult (Havenga, 1987).

2.2.1.2 Status

Secondly, the term can refer to status, which implies an acceptance by society. Society judge the individual as having " completed his or her novitiate and is now incorporated fully into the community" (Rogers, 1986, p. 5). This conceptualisation produces another way of constructing a possible definition of adult namely, by focusing on the conception that is created by

the society. Considering this, Knowles (1970, p. 24) then describes an adult by using the following definition:

> "...a person is an adult to the extent that the individual is performing social roles typically assigned by our culture to those it considers to be adults - the roles of worker, spouse, parent, responsible citizen, soldier and the like."

2.2.1.3 A social sub-set

The word *adult* can also be used as reference to a social sub-set, which describes the adult as distinct from children. Havenga (1987) implies that being an adult means one is no longer a child or adolescent. Therefore, the term *adult* is described as being the opposite of the meaning of *child*. In accordance with this, Knowles (1979, p. 40; 1970, p. 24) defines an adult as a person who perceives himself or herself to be "essentially responsible for his or her own life".

Ironside (1989) also indicates that people tend to define adult in terms of psychological criteria that distinguish adults from children. An adult is accordingly defined as one who is emotionally, socially and intellectually matured. The problem that Ironside (1989) foresees with this definition is the linking of maturity to social and economic status. This implies that people still pursuing their initial education, at whatever age, are not considered adults. Furthermore, personal maturity is not an absolute state, but rather a lifelong process conditioned by personal and social needs.

2.2.1.4 A set of ideals and values

Lastly, the term *adult* can include a set of ideals and values which Rogers (1986) labels as adulthood. The inherent characteristics of the concept *adulthood*, lends itself to a better understanding of the term *adult.* However, Havenga (1987) warns that there are several different definitions about adulthood depending on the perspective that has been employed. For

example, the moral, economic, social, religious, psychological and biological perspectives on adulthood will all differ from each other. Although variances do occur, Rogers identified three main clusters of ideas within any view of adulthood:

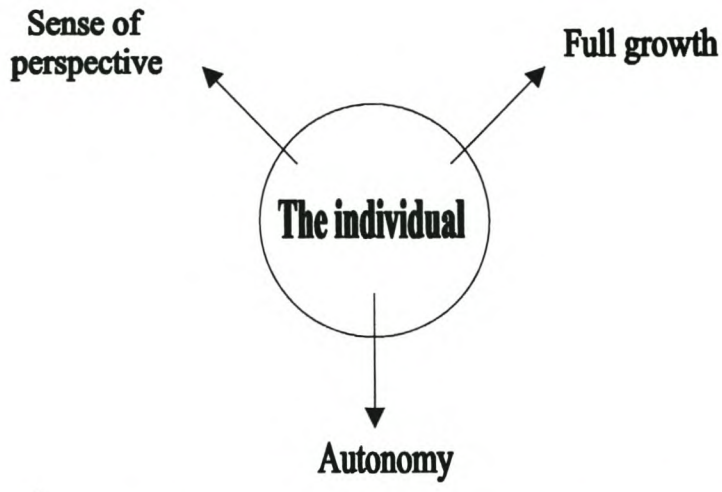


Figure 1: The adult and aspiring adulthood (Rogers, 1986, p. 6)

a) Full growth

An overriding concept behind the word *adult*, is that of maturity (Rogers, 1986). Maturity is not just a state but also an ideal to be aiming at rather than achieved in full. The process of moving towards ever greater maturity is strongly associated with adulthood and includes the idea of:

- full development,
- personal growth; and
- the expansion and utilisation of all the individual's talents.

b) Sense of perspective

It is expected of adults to act with a sense of perspective that will lead to reasonable judgements about themselves and others. Adults have accumulated enough experience to support them in achieving a more balanced approach to life (Daines, Daines and Graham, 1994; Knowles,

1995; Knowles in Craig, 1987; Nellmapius, 1992; Newton, 1977; Rinke, 1985; Rogers 1986). This experience also helps adults to be more mature and developed in their thinking in relation to others (Rogers, 1996).

c) Autonomy

According to Rogers (1986, p. 7) "one of the key concepts of being an adult and not being childish, is of taking responsibility for oneself, for one's own deeds and development." Sometimes adults are responsible for others as well, but "at the very least they are responsible for their own actions and reactions" (Rogers, 1986, p. 7). Therefore, adulthood implies a degree of autonomy, independence and responsible decision-making (Knowles, 1970; Knowles, 1995; Reed, 1993;).

For the purpose of this study, the definition of the term *adult* strongly relies on the last mentioned conceptualisation. Thus, the term *adult* refers to an individual who is physically fully developed, cultivates a sense of perspective and takes responsibility for his/her own life.

Since a clear definition of the term adult has been stated, the next section will deal with the characteristics of adult learners in comparison to children. However, in order to explain this comparison, it is necessary to give attention to the following orientations to learning.

2.3 Pedagogy and Andragogy

2.3.1 Pedagogy

Most of what is known about learning has been derived from studies of learning in children and animals. Furthermore, most of what is known about teaching has been derived from experience with teaching children under conditions of compulsory attendance (Knowles, 1970).

From these experiences, there has emerged the "technology" of pedagogy. This term is derived from the Greek stem *paid*, meaning child and *agogos*, meaning leading (Landman, Van der Merwe, Pitout, Smith and Windell, 1990, p. 98). Thus, Knowles states that pedagogy means "the art and science of teaching children"(1970, p. 37). To this, Harmse (1981) adds that it must be done by a responsible adult person. Moreover, in applying the knowledge of pedagogy, one becomes a pedagogue (Landman et al., 1990).

2.3.2 Andragogy

Ingalls (1973) explains that the name andragogy derives from a combination of the classical Greek noun *agogos* (the activity of leading) with the stem *andr* (meaning adult). Andragogy is thus defined as "the art and science of leading adult learning" (Knowles, 1970, p. 38). A German grammar school teacher, Alexander Kapp, first used the word in 1833. Kapp (cited by Ingalls, 1973, p. 10) distinguished andragogy from pedagogy in referring to andragogy as the normal and natural process of continuing education for adults. Therefore, andragogy "presents a learning model that centers on learners rather than instruction, making them active participants in the process" (Dastoor, 1993, p. 17).

2.3.3 Principles of pedagogy and andragogy

The trainer is required to recognise the uniqueness of each person in the training situation (Daines et al., 1994). To guide the trainer to work in ways that will best help the individual to achieve his or her learning objectives, a number of characteristics of adults must be taken into account. These characteristics also represent the principles of andragogy.

Together with the principles of andragogy, the pedagogical principles are also clarified. Naturally, the characteristics of children act as the basis of

pedagogy. Although andragogy is the preferred mode of training when working with adults, occasionally a more pedagogical approach may be necessary (Davenport and Davenport, 1985b). To help people learn, trainers have to present information so that trainees can relate to it. For example, the pedagogical approach might be useful in situations where the adult has little or no experience concerning the subject (Knowles cited in Nellmapius, 1992, p. 35; Reed, 1993).

Thus, for the purpose of this research, andragogy and pedagogy represent the orientations that can lead to a certain training style. Since a situation may sometimes require the application of both orientations, an explanation of the principles of both pedagogy and andragogy is given below.

2.3.3.1 Self-Concept

This principle concerns the fact that as a person grows and matures his self-concept moves from one of total dependency to one of increasing self-directedness. "Every individual enters this world in a condition of total dependency" (Knowles, 1970, p. 39). Therefore, the child is a dependent personality and the pedagogical model assigns full responsibility to the teacher for making all the decisions. These decisions evolve around what should be learned, when it should be learned, how it should be learned and whether it has been learned (Knowles, 1995).

As a child becomes an adult, the individual develops a deep psychological need to be perceived by others as being self-directing and independent (Nellmapius, 1992). Adults are characterised by an emotional maturity and they take responsibility for their own lives and decisions (Daines et al., 1994). That is why it is important to treat adults as being capable of taking responsibility for their own learning.

Therefore, any learning situation involving the adult learner in a role of dependency and unquestioning compliance will generate immediate

resistance and resentment (Newton 1977). According to Knowles (1970) the reason for this resentment descends from the fact that the adult experiences a tension between the situation and his/her self-concept. This tension can be explained as an incongruence between the learning conditions and the adult's self-concept as an autonomous individual. Examples of situations in which adults feel that their self-concept of maturity are violated are (Ingalls, 1973, p. 5):

- being treated with a lack of respect,
- being talked down to,
- being judged,
- and being treated like children.

Ingalls (1973) states that because of the influence of traditional pedagogical practices, adults tend to come to training programmes allowing the instructor to take responsibility for their learning. The andragogical approach, however, makes use of a democratic and participative learning environment, which encourages the development of self-direction (Nellmapius, 1992). The discovery of the capability of self-direction in the training situation often leads to an increase in motivation to learn, thus continuing the learning process.

2.3.3.2 The role of experience

To a child, experience is something that happens *to* him (Ingalls, 1973). It is seen as an external event that has an effect on the person, but is not regarded as an integral part of him. Therefore, children frequently define themselves in terms of external definers such as (Knowles, 1980, p. 50):

- parents,
- siblings,
- where he lives
- what school he goes to.

Thus, Knowles (1980) states that a child's self-identity is largely dependent on external sources. Children enter the learning environment with little

experience to use as a resource for learning. The pedagogic orientation considers this lack of experience. In the school situation, it is not expected of the child to contribute to the learning process by means of sharing experiences. It is the experience of the teacher, textbook author and the audio-visual aids that counts (Knowles, 1995). However, as children mature they increasingly define who they are by their experience (Ingalls, 1973).

When referring to adults, experience serves to determine who they are and to create their sense of self-identity (Rogers, 1996). Consequently, an adult is likely to identify himself in terms of (Knowles, 1980, p. 50):

- his occupation
- where he has worked
- his travels
- his training
- his achievements

Within the context of adult learners, the utilisation of experience fulfils a dual role. Firstly, every adult enters the training situation with a different background of experience. Knowles (1995) explains that adults have a greater volume and a different quality of experience than children. The greater volume is obvious because the longer one lives, the more experience will be accumulated. The difference in quality of experience arises from the roles that people perform.

This means that the experience of adults is valued as a rich resource for learning. Adults therefore have more to contribute to the learning of others. The andragogical approach uses two-way and multidirectional techniques in order to optimise the sharing of these experiences (Ingalls, 1973).

Secondly, in using experience in the training situation, the instructor conveys respect for the adult learner. An adult defines who he is and establishes his self-identity in terms of his accumulation of a unique set of experiences

(Knowles, 1970). Considering this, it is obvious that adults value their experience considerably and wish to invest it in their learning efforts (Alberts, 1988).

In contrast to children, adults have a richer foundation of experience to which they can relate new experiences (Knowles, 1970). Thus, adults are able to transfer what they already know to their current learning (Daines et al., 1994; Grupe and Connolly, 1995). This is an important aspect of the learning process since new facts take on meaning, as adults are able to relate them to past experiences. Edwards, Hanson and Raggatt (1996) state that the learner's response to a new experience is determined significantly by past experiences, which have contributed to the ways in which the learner perceives the world. Consequently, when an adult's experience is devalued or ignored, this implies a rejection of the person, not just the experience.

2.3.3.2 Established patterns of learning

Adults, in contrast to children, have accumulated experience and knowledge that cause them to develop established attitudes and patterns of thought (Daines et al., 1994). Rogers (1996) explains that adults also tend to have fixed ways of doing things which help them cope with new situations and ideas. This implies that all learners have already developed their own strategies and patterns of learning, which they have found to help them learn most easily, most quickly and most effectively. However, over-learnt habits and strongly held beliefs can become a problem. Habits and beliefs can prevent individuals from considering something new, whether it is a different technique, an alternative set of values, a recent development or an original idea (Daines et al., 1994).

What is also influenced by experience and patterns of learning, is the pace of learning (Rogers, 1986). According to Katz (1994) learning speed varies among adult learners. In those areas where trainees can call upon a vast amount of experience or have direct experience of the subject matter, they

tend to learn faster than children. However, a prerequisite is that the new material does not conflict with existing knowledge (Rogers, 1986). On the other hand, if the adult has a lack of experience on which to fasten the new material, he learns slower than a child would have done in the same circumstances.

The pace of learning is also influenced by the content of what must be learnt. Adults may find it more difficult to recall isolated facts and to learn under pressure than children do (Daines et al., 1994). Nonetheless, in contrast to children, adults have increased powers of comprehension in organising material into meaningful wholes.

2.3.3.4 Readiness to Learn

This principle describes the fact that as an individual matures, his readiness to learn can be ascribed to different aspects of life. For children it is important to learn those things that are necessary for them to know in order to advance from one phase of development to the next (Knowles, 1970).

These aspects that children have to learn have been labelled as developmental tasks. According to Knowles (1980, p. 51) these are tasks "which arise at or about a certain period in the individual's life. The successful achievement of these tasks leads to happiness and to success with later tasks. On the other hand, failure in accomplishing developmental tasks can lead to unhappiness, disapproval by the society and difficulty in performing later tasks".

Each developmental task produces a readiness to learn which at each peak presents a "teachable moment". Havinghurst (cited in Craig, 1987, p. 172) defines this concept as "the peak of our desire to learn." It is obvious, for example, that the learning of basic words must precede writing an essay, or that children can only walk after they have learnt how to crawl.

Thus, children become ready to learn when they are told they have to learn something to ensure advancement. Pedagogy assumes that children are ready to learn because of their biological and academic development as well as social pressure. A child's readiness is therefore, largely a function of age and development (Knowles, 1995).

In contrast, the andragogical model assumes that adults become ready to learn when they experience a need to know (Knowles, 1995). Adults want to learn when they experience a need to be able to do something in order to perform more effectively in some aspect of their lives. Most of the time they become involved in learning because of pressure they experience in their current life situation (Alberts, 1988). Thus, adults also have certain developmental phases and teachable moments (Knowles, 1970).

While a child's readiness to learn depends on his age and biological development, the adult's developmental tasks increasingly relate to social roles that form their immediate concern, for example (Ingalls, 1973, p. 7):

- Planning a career
- Working
- Being a marriage partner
- Raising a family
- Recreational activities

Since adults are ever-developing beings, they are ready to learn at points in the course of their lives when they change or advance their life structures (Alberts, 1988). Knowles (in Craig, 1987) claims that the transitions people make in moving from one developmental phase to another, serve as an important source of readiness to learn. Any change, such as marriage, the birth of children, the loss of a job, divorce or change in residence, can trigger a readiness to learn (Knowles, 1995). However, the pace and direction of these changes vary from person to person (Rogers, 1986).

The critical implication of this principle is the importance of timing the learning experience to coincide with the learner's maturation (Rogers, 1986). Fortunately, it is by no means assumed that the instructor has to be passive and wait for readiness to develop naturally. Readiness can be induced by (Knowles, 1995, p. 2-3):

- exposing learners to more effective role models
- and engaging them in career planning
- providing adults with diagnostic experiences to assess the gaps between where they are now and where they want to be in terms of their personal competencies.

2.3.3.5 Motivation to learn

Knowles (1995, p. 1-2) identified the following factors as the primary conditions that motivate children to learn:

- External pressures from teachers and parents,
- Competition for grades,
- Consequences of failure.

Therefore, the pedagogic model assumes that extrinsic motivators primarily motivate children (Knowles in Craig, 1987, p. 173).

Adults, on the other hand, tend to be highly motivated to learn when thy need to resolve immediate, short-term conflicts or problems in their everyday life (Edwards et al., 1996). As mentioned in section 2.3.3.4 these can be described as teachable moments. According to Zemke and Zemke (1995), the key to using adults' "natural" motivation is tapping into their most teachable moments. Thus, adults must be able to see how a learning experience will help them acquire the skills, knowledge and attitudes to work through their situations (Reed, 1993).

Adults feel motivated to learn when the content of what is to be learnt relates to their life situation (Nellmapius, 1992). This highlights the importance of clearly articulated course goals. Adults are motivated by

course goals that clearly state how their needs will be met by the specific training (Katz, 1994).

Furthermore, adults are more internally than externally motivated (Knowles, 1995; Nellmapius, 1992; Reed, 1993). Knowles (in Craig, 1987) states that "adult learners respond to extrinsic motivators such as wage raises, promotion and better working conditions, and the like - up to the point that they are reasonably well satisfied." Although adults are externally motivated, the more enduring motivators are intrinsic factors such as:

- Self-esteem (Daines et al., 1994; Knowles, 1995; Knowles in Craig, 1987; Reed, 1993)
- Self-perception (Knowles, 1995; Reed, 1993)
- Confidence (Daines et al., 1994 Knowles, 1995; Reed, 1993)
- Recognition (Knowles, 1995; Reed, 1993)
- Quality of life (Knowles, 1995; Reed, 1993)
- Self-actualisation (Knowles, 1995)
- Power (Knowles in Craig, 1987)
- Broadened responsibilities (Knowles in Craig, 1987)
- Achievement (Knowles in Craig, 1987).
- Satisfying curiosity (Daines et al., 1994)
- To discover "if I can" (Daines et al., 1994)
- Gaining approval of others (Daines et al., 1994)
- Making social contact (Daines et al., 1994)
- Learning or developing a skill/ideas (Daines et al., 1994)

It is important to realise that attention must also be given to factors that demotivate adults to engage in a learning situation such as training. Daines et al. (1994, p. 9-10) identified the following ten disincentives:

- Failure to achieve
- Lack of overall purpose
- Unrealistic goals
- An unfriendly atmosphere
- Poor class organisation and management

- An uncomfortable environment
- Inadequate resources
- Little individual attention
- A patronising and/or unfriendly instructor
- Poor group support.

2.3.3.6 Adults have a need to know why they should learn something

As explained in section 2.3.3.4 children learn something because they are told it is important to know (Knowles, 1995). Compared to children, adults are intensely protective of their time and desire to use it in the most effective manner possible (Grupe and Connolly, 1995). Therefore, adults need to know why they should learn something before they will invest time and energy in the process (Knowles in Craig, 1987; Nellmapius 1992).

Ideally, the adult's awareness concerning the need to know must be discovered by himself or herself. For learning to be effective, Knowles (cited in Nellmapius, 1992, p. 34) said, "... the learners [must] discover for themselves the gaps between where they are now and where they want to be."

2.3.3.7 Orientation to learning

Children have been conditioned to have a subject-centered orientation to most learning. That is why they see learning as a process of acquiring prescribed subject-matter content (Knowles, 1995). Children also tend to have a postponed application on most of their learning. For example, most of what they learn in elementary school they learnt in order to get into high school and what they learn in high school must prepare them for university or college (Knowles, 1978). Thus, a child's learning can be seen in terms of "preparation for the future" rather than "doing in the present" (Ingalls, 1973, p. 8).

Adults, on the contrary, want to find solutions to problems they face and can be described as being problem-orientated (Grupe and Connolly, 1995). Therefore, the andragogical approach is an orientation to the discovery of an improvable situation, a desired goal or a developmental possibility in relation to the reality of the present situation (Ingalls, 1973).

The adult enters a training situation because he experiences an inadequacy in coping with a current life problem. A problem may be regarded as " the natural learning unit of the adult, since a large portion of an adult's life is directed towards problems for which no ready solution exists" (Alberts, 1988, p. 58). Therefore, adult learning is not a "preparation for life" type of learning. Rather it is a problem-solving approach where adults direct their learning efforts at their particular learning objectives and the specific knowledge they wish to acquire (Alberts, 1988).

2.3.3.8 Time perspective

While children postpone the application of their learning, adults want to apply tomorrow what they learn today (Knowles, 1978). The adult wishes to apply that which he has learnt immediately in order to solve his existing life problems. Knowles (1970) calls this a perspective of immediacy in application towards learning.

However, Alberts (1988) claims that adults will also engage in learning efforts which will benefit the individual in the foreseeable future, for example when promotion is at stake. "Whereas time is vague and limited to a child, the adult realises that time is limited and that progress in life is linked to time" (Alberts, 1988, p. 58). This is also the reason why adults specify learning objectives and the activities by which they will be attained.

2.3.3.9 Sensitive to failure

Daines et al. (1994) state that adults lack confidence in themselves as learners and are likely to underestimate their own powers. Since adults view training situations as a "proving ground" where their professional reputations and personal image are on the line, they are prone to taking errors personally (Katz, 1994). Thus, adults tend to be over-anxious and reluctant to risk-taking mistakes. Anxiety can obviously be an important handicap for adult learners, especially when they have to learn in overly competitive situations (Daines et al., 1994).

Although everybody is afraid of learning failure, there are two important differences between adults and children. Firstly, children are more likely to engage in risk-taking behaviour because they do not have a longstanding professional reputation to uphold. Secondly, children are busy with learning activities for the most part of a year. Adults, on the contrary, are only occasionally involved in training situations. This can increase the anxiety factor since it is an unfamiliar situation, different to what the adult is used to.

2.3.3.10 Expectations

In contrast to children, adults have specific expectations when they engage in a learning situation (Daines et al., 1994). These expectations need to be taken into account when dealing with adult learners because of the implications for the effectiveness of training. The origin of the expectations is believed to be based on the adult's experience of schooling and education since leaving school (Rogers, 1986). The following expectations of adult learners were identified by Daines et al. (1994, p. 7):

- Adults expect the instructor to know his/her subject.
- Adults expect the instructor to show enthusiasm for the subject.
- Instructors must have a sense of eagerness to teach and to learn from others.

- Adults expect the instructor to be a competent teacher and to employ the necessary teaching skills when working with a group.
- Adults expect value for money. This means they want to attend a course, which is relevant to their needs and matches their abilities.
- Adults expect to be made to work and to achieve some result.
- Adults expect to enjoy their learning.
- Adults expect their adult status to be recognised.
- Adults expect regular feedback on how they are doing as individuals and as members of a group (Daines et al., 1994; Katz, 1994; Reed, 1993).

2.3.3.11 Commitment

The child's involvement with learning is likely to be one of complete commitment. The reason for this type of undertaking is probably that children spend most of their day in a learning environment. According to Cross (1981, p. 241) "...there is a common understanding that the major "full-time" responsibility of children and adolescents is going to school."

The learning commitment of adults however, is normally part-time (Daines et al., 1994). Whereas for adults commitment to job and family is the primary full-time responsibility, participation in learning activities such as training is a secondary commitment (Cross, 1981). Therefore, adults may not be able to devote additional time to their studies because they combine attending a course with family responsibilities (Daines et al., 1994).

2.3.4 Process elements of pedagogy and andragogy

When asked what makes an adult training course commendable, people identify factors that can be organised into three broad categories (Daines et al., 1994). Firstly, people describe a "good" course as being relevant to their needs. Clear statements of purpose and appropriate content presented at

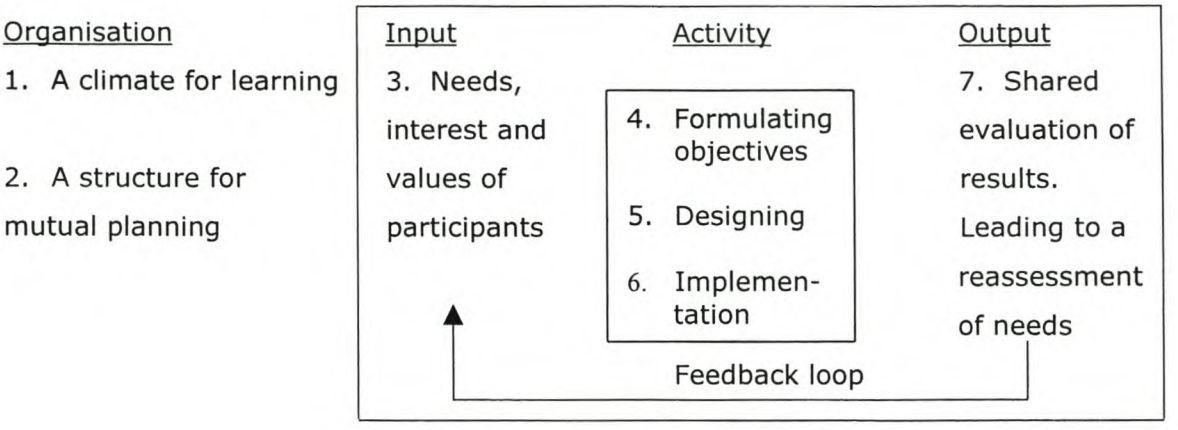
the right level and pace are therefore important. Furthermore, adults value a variety of interesting teaching and learning methods. This implies the opportunity to apply new knowledge with appropriate feedback.

Secondly, it is important to treat participants in an adult manner. Their experience must be welcomed and valued, and they should be able to actively participate in the learning process. The instructor needs to be enthusiastic and sensitive to the needs of both individuals and the group. In addition, instructors must be professionally competent and good communicators who are "...able to share as equals in the life of the group" (Daines et al., 1994, p. 15).

Lastly, people enumerate aspects that have to do with efficient organisation and administration of the training course. These aspects include issues such as physical access, seating, a clean and comfortable environment as well as pre-course communication and a subsequent follow-up.

It should be clear that the designing of a training course for adults must give attention to certain fundamental conditions. For the purpose of this study, the development, organisation and administration of courses will be mainly explained according to the andragogical approach. However, as mentioned in section 2.3 3 the learning situation may sometimes require the instructor to use pedagogical design elements. Consequently, the design elements of both orientations are included in the discussion. This discussion will evolve around the seven steps of the andragogical orientation, which are graphically set out in table 1.

Table 1: The seven-step process of andragogy



(Ingalls, 1973, p. 11)

2.3.4.1 The learning climate

For the purpose of this study, the learning climate consists of two components, namely the physical and the psychological environments.

Firstly, the physical environment should always be one in which the child as well as the adult feels at ease. Thus, it is important to use furnishings and equipment of the appropriate size depending on the learning group (Knowles, 1980). When working with children, chairs are usually placed in rows and the teacher stands in the front of the classroom. This arrangement is, according to Knowles (1995), least conducive to two-way communication, but because children lack experiences to share, it does not seem to be problematic. On the other hand, adults have more experience to yield, which implicates a more informal setting.

The second component of the learning climate, namely the psychological environment, also plays an important role in the effectiveness of learning. According to Landman et al. (1990) the aim of all educational intervention is to assist the child in becoming an adult. However, intervention is only possible where there exits a relationship of authority. Thus, the pedagogical orientation is essentially focused on an authority-based climate (Du Plooy,

1991; Harmse, 1981). The teacher demands obedience from the child who must have regard for the teacher's authority. Pedagogy also proclaims a more formal atmosphere whereby the teacher expects a necessary level of discipline.

The characteristics of adult learners force the trainer to create a different psychological climate in order to be conducive to learning. The instructor has the responsibility of creating a climate of:

- Mutual respect (Du Plooy, 1991; Edwards et al., 1996; Knowles, 1984; Knowles, 1995)
- Collaborativeness (Du Plooy, 1991; Edwards et al., 1996; Knowles, 1984; Knowles, 1995)
- Mutual trust (Edwards et al., 1996; Knowles, 1984; Knowles, 1995)
- Supportiveness (Edwards et al., 1996; Knowles, 1984; Knowles, 1995)
- Openness and authenticity (Edwards et al., 1996; Knowles, 1984; Knowles, 1995)
- Fun (Edwards et al., 1996; Knowles, 1984; Knowles, 1995).

2.3.4.2 Planning

"There is a basic law of human nature at work here: people tend to feel committed to any decision in proportion to the extent to which they have participated in making it. The reverse is even more true - people tend to feel uncommitted to any decision to the extent that they feel others are making it for them and imposing it on them" (Knowles, 1984, p. 17). Although this is true for both adults and children, the latter is likely to be regarded as too inexperienced and dependent to participate in the planning process of a course. Therefore, the teacher is entirely responsible for planning a specific course (Du Plooy, 1991).

In contrast, adults consider themselves to be independent and self-directing, and want to be actively involved in the planning and directing of their

learning (Reed, 1993). To ensure the effectiveness of training, they need to be part of a learning experience that allows them some form of control. Andragogy assumes that the responsibility for performing this function is a mutual one between the learners and the trainer (Knowles, 1970).

2.3.4.3 Diagnosis of needs and formulation of objectives

Although the teacher diagnoses the child's needs for him/her, adults need to experience a sense of control in order to feel comfortable in the training situation (Reed, 1993). By involving the adult in diagnosing the learning needs through a process of mutual self-diagnosis, this need is respected. Therefore, the andragogical orientation creates conditions and provides tools that will enable adult learners to become aware of their training needs (Knowles, 1970).

For the same reason, andragogy involves adults in the formulation of the course objectives (Du Plooy, 1991). It is vital to know what adults want to achieve with a specific course. The trainer can only gain this knowledge if the learners have the opportunity to state what they want. In addition, this type of inquiry makes adults feel respected and valued.

2.3.4.4 Design

Children engage in learning activities with a subject-centered orientation (Knowles, 1995). Consequently, they see learning as a process of acquiring prescribed subject matter content. The pedagogical approach acknowledges this in organising the curriculum according to content units and is sequenced according to the logic of the subject matter (Du Plooy, 1991; Knowles, 1995).

On the other hand, the adult's motivation to learn after experiencing a need causes him to enter training with a problem-centered orientation to learning (Nellmapius, 1992). This implies that learning experiences must be

organised around life situations. Therefore, adult-training courses consist of problem-units, which succeed each other according to the learner's readiness to deal with it (Knowles, 1995).

2.3.4.5 Implementation

Children lack the self-directedness and experience that is evident in adult learners. To compensate for this , Ingalls (1973) explains that in the pedagogical setting the teacher is responsible for the implementation of the necessary activities. "The child's role tends to be that of fairly passive recipient of the teacher's instruction" (Knowles, 1970, p. 43). This submissiveness of the child necessitates the teacher to use transmission techniques in order to facilitate the learning process (Du Plooy, 1991).

In contrast, when training adults the implementation element entails the procedures that can be used to *involve* learners in designing and managing a pattern of learning experiences (Knowles in Craig, 1987). Knowles (1970, p. 43) claims that andragogy assumes that a trainer "... can't really 'teach' in the sense of 'make a person learn,' but that one person can only help another person learn."

In congruence with the adult's self-concept of self-directedness and independence, the andragogical orientation treats the learning process as the mutual responsibility of both instructor and learners (Knowles, 1980). Adults can effectively share in taking responsibility for the learning process because they can contribute to the learning of others by means of sharing their experiences (Davenport and Davenport, 1985a). In order for adult learners to tap into their own and other learners' experiences, trainers should make use of experiential training techniques such as:

- Group discussion (Davenport and Davenport, 1985a; Ingalls, 1973; Reed, 1993)
- Simulation (Ingalls, 1973; Reed, 1993)
- Role playing (Davenport and Davenport, 1985a; Ingalls, 1973)

- Buzz groups (Ingalls, 1973)
- Team designing (Ingalls, 1973)
- Skill practice sessions (Davenport and Davenport, 1985a; Ingalls, 1973)
- Problem-solving projects (Knowles, 1995; Reed, 1993)
- Interactive media (Knowles, 1995)
- Action projects (Davenport and Davenport, 1985a)
- Consultative supervision (Davenport and Davenport, 1985a)
- Demonstration (Davenport and Davenport, 1985a)
- The case method (Davenport and Davenport, 1985a)
- Critical-incident process (Davenport and Davenport, 1985a).

2.3.4.6 Evaluation of learning

According to Landman et al., (1990) knowledge is a prerequisite for self-evaluation. In the pedagogical setting, the adult is seen as having more knowledge than the child and therefore capable of evaluating the pupil. Children's lack of knowledge is likely to make them incapable of evaluating themselves. Thus, evaluation is the responsibility of the teacher (Du Plooy, 1991).

Knowles (1970) claims that nothing makes an adult feel more childlike than being judged by another adult. The one who is being judged experiences it as the ultimate sign of disrespect and dependency. For this reason, andragogy requires the learners to be actively involved through a process of self-evaluation. This implies that the trainer helps the learners in gathering evidence for themselves about the progress they are making toward their training goals. This can then lead to a rediagnosis of the identified needs. Furthermore, adults must be involved in the judging of the quality and worth of the total programme (Knowles, 1984). Consequently, evaluation is seen as a mutual undertaking involving the trainer as well as the learner (Du Plooy, 1991).

It is evident that the trainer plays an important role in the application of these six process elements. The trainer is responsible for the ways in which the process elements amplify each other in order to optimise the learning process. Therefore, the next section attends to the trainer as one of the significant aspects in the training field.

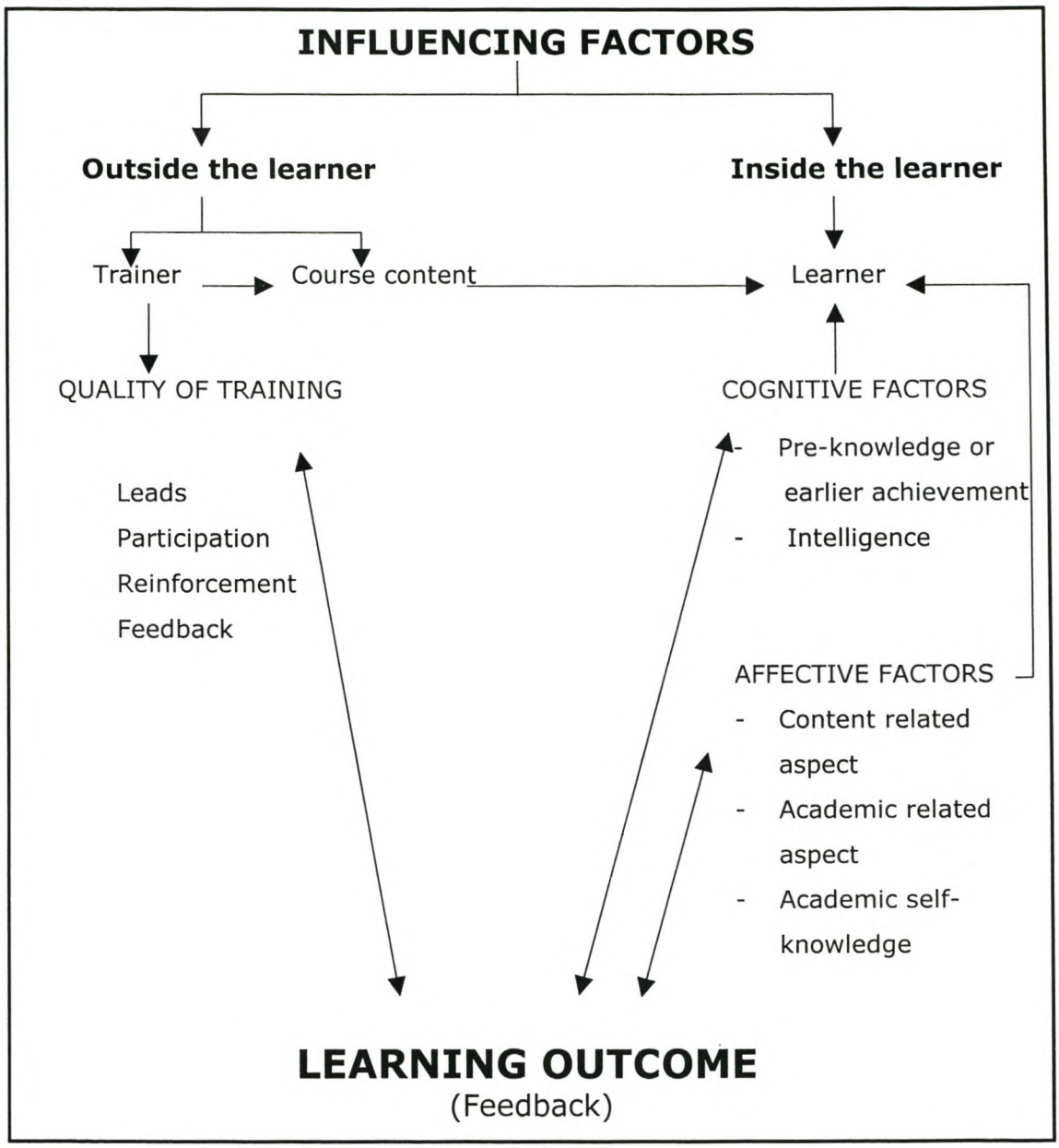
2.4 The trainer

In order to realise the significance of trainers in the organisation as a whole, it is necessary to apprehend the challenge of training. Few would dispute that training and development must be at the top of the agenda for all businesses. The most successful and competitive organisations are those which provide consistently high levels of effective and relevant training (Prior, 1994).

Since training is regarded as a vital organisational activity, it is crucial to state three basic principles of training. Firstly, the purpose of training is to change behaviour so that individuals (trainees) can perform a more meaningful, effective and valuable service. New behaviour is introduced or existing behaviour is modified so that it results in a particular or specified kind of behaviour (Knowles 1978; Nadler and Wiggs, 1986).

Secondly, the effectiveness of training must be quantifiable and measurable. This will enable the trainer to calculate the outcomes in terms of value for money and contribution to the organisation. Lastly, the true cost of training must be determined at the start of the development of the training plan. Evidence suggests that if an organisation projects the costs and benefits of training beforehand, they are much more likely to commit to training on a continuing basis (Prior, 1994).

Adherence to these principles is the responsibility of the trainer. Therefore, the trainer undoubtedly plays a dominant role in training. Zastrau (1986) describes the trainer as one of the essential components in the training situation. In addition, Monteith (1987) identified the trainer as a factor that influences the learning process as indicated in figure 2.



(adapted from Monteith, 1987, p. 7)

Figure 2: Factors that influence the effectiveness of learning

Thus, the trainer plays a critical role in the quality of the learning that takes place in the training situation. The quality of the learning, in turn, directly affects the learning outcome. Therefore, it is safe to assume that trainers have an extensive impact on the effectiveness of training.

Since the trainer is reckoned a factor that influences the outcome of training, it is important to have a clear understanding of the concept *trainer*. Considering that the significance of the trainer was preceded by the assumptions of training, it is necessary to include the definition of training when defining the trainer.

2.4.1 Definitions of training and trainer

2.4.1.1 Training

According to the Essential English Dictionary, training can be described as "... learning or teaching the skills that are needed for the job" (Fox, 1989, p. 853). Nadler and Wiggs interprets training as "...those activities which are designed to improve performance on the job the employee is presently doing or is being hired to do..."(1986, pp. 40-41). Training is also described as "...a systematic series of activities to which people are subjected to in order to result in new knowledge, skills or behaviour" (Plug, Louw, Gouws and Meyer, 1997, p. 257). Lastly, Lessing (cited in Zastrau, 1986, p. 13) defines training as:

- a planned, systematic and purposeful action of the organisation with the objective to
- change specific behaviour of its employees and
- to improve their present (and/or future) job performance in order to
- help the organisation to achieve certain goals while at the same time
- satisfying the needs of the employees.

For the purpose of this study, the following definition will represent the concept of training: a planned and systematic series of activities in which people (trainees) participate to gain new knowledge, skills and or behaviour

changes in order to improve their performance and satisfy their own as well as organisational goals.

2.4.1.2 Trainer

The definition of training makes it easier to comprehend the meaning of trainer. According to Heimlich and Norland (1994, p. 53) a teacher is traditionally the one who:

- selects the content;
- arranges the physical environment;
- initiates and directs interaction with the learning community and the individual student.

In accordance with this definition of a teacher, these authors state that a trainer has the potential to play the same role in orchestrating the learning process as a teacher. The difference is that trainers usually vary the extent to which they manipulate each of these elements. Zastrau (1986) describes the trainer as the person responsible for the co-ordination of the different sub-components of training and the creator of a favourable learning climate. Furthermore, the trainer is responsible for presenting the course.

For the purpose of this study, the trainer can be defined as the person responsible for:

- proper selecting and organising of the necessary content in order to present it in the most suitable manner to ensure the effectiveness of training;
- setting a suitable climate, which will enhance the learning process;
- regular evaluation of training courses to ensure the attainment of identified goals.

2.4.2 Roles of a trainer

In order to support the above definition it is necessary to explain the roles that apply to a trainer in the training situation. However, the following description should not be seen as an exclusive list of the roles of a trainer. For the purpose of this study, focus will be placed on the actions surrounding the training situation and not the roles that the trainer fulfils in the organisation as a whole.

2.4.2.1 Facilitator

This role entails the managing of group discussions and group processes so that learning takes place and group members feel the experience is positive (Baird, Schneier and Laird, 1985). Furthermore, the facilitator challenges the thinking processes of the learners and promotes broader capability (Walklin, 1990).

2.4.2.2 Team member

Connected to the above role, is the role of being a team member. Rogers (1986) emphasises the purpose of this role in stating that it enables trainers to experience what the trainees are experiencing. In addition, it will directly assist the trainer in helping the various members to learn. Therefore, being a team member can help the trainer to fulfil the role of a councillor (Rogers, 1986).

2.4.2.3 Individual development counsellor

This role entails helping an individual to assess personal competencies, values, goals and identifying and planning development and career actions (Baird et al., 1985).

2.4.2.4 Instructional writer

The role of instructional writer requires the preparation of written learning and instructional manuals (Baird et al., 1985).

2.4.2.5 Instructor

This role is also known as the presenter (Prior, 1994). Therefore, this role requires the presenting of information and directing structured learning experiences so that learning takes place (Baird et al., 1985).

2.4.2.6 Task analyst

The identification of activities, tasks, subtasks and human resource support requirements necessary to accomplish specific results in a job, is the essence of this role (McCullough, 1987).

2.4.2.7 Needs analyst

The role of needs analyst requires of the trainer to define the gaps between ideal and actual performance. Furthermore, he must specify the causes for these gaps (Baird et al., 1985). This role, together with the role of task analyst, is described by Prior (1994) as the consultant role.

2.4.2.8 Programme designer

The programme designer must translate learning needs that were identified by the needs analyst into (Baird et al., 1985):

- objectives,
- content,
- learning activities,
- designs for a specific programme.

2.4.2.9 Programme administrator

This role requires the trainer to ensure that the facilities, equipment, materials, participants and other components of the learning event are present. These aspects must be organised in such a way that the training programme runs smoothly (Baird et al., 1985, p. 299).

2.4.2.10 Media specialist

The role of media specialist refers to the producing of software and hardware technologies for training and development. Moreover, this role emphasises the use of audio, visual and computer technologies in order to facilitate learning (McCullough, 1987).

2.4.2.11 Theoretician

According to McCullough (1987) this role requires the developing and testing of theories of learning, training and development.

2.4.2.12 Transfer agent

The role of the transfer agent requires of the trainer to help individuals apply their learning in the organisation after the learning experience (Baird et al., 1985).

2.4.2.13 Evaluator

This role refers to the identification of the extent of a training programme's impact (Baird et al., 1985).

The explanation of these roles makes it easier to comprehend the difficult task that is assigned to trainers. Each trainer combines the roles differently which then evidently contribute to the style a trainer displays in the training situation. Therefore, it is necessary to explain training styles as one of the prominent features within this study.

2.5 Training style

Trainers and trainees are both involved in the human activity called learning. Trainers strive to train as effectively as possible in order to optimise learning. Conti and Welborn (1986) state that the efficiency of learning can be improved by knowing more about each of these human elements in the training-learning situation.

Consequently, the concepts of training style and learning style are always hauled into discussions about training. When addressing these concepts, the ultimate issue is the relationship of these styles to the trainees' success in training (Conti and Welborn, 1986). Because of the nature of this study, however, the focus will fall on the training style of trainers as an aspect that impacts on the success of training.

Trainers are not all cast from the same mould (Walklin, 1990). Two trainers may both use lectures and small group discussions but still differ identifiably from each other (Broadbent, 1998; Fischer and Fischer, 1979). Russ (1994) explains that while the basic content and format of training programmes may remain the same, personal style makes all the difference. In a study about training styles and student achievement, Conti and Welborne (1986) found that the trainer's style has a major influence on the achievement of students. Thus, "...the trainer's style sets the tone for the learning process" (Russ, 1994, p. 46).

Not only does the trainer's style set the tone for the learning process, but according to Daines et al. (1994) it also serve as a motivating factor in helping adult learners to continue learning. Therefore, since it is evident that training style influences the training-learning exchange, it is necessary to state a clear definition of this aspect.

2.5.1 Definition of training style

According to Brookfield, style is a mode of expression. He explains that it is the achievement of "...the balance between developing a guiding vision that informs our training and responding flexibly to different contexts" (cited in Heimlich and Norland, 1994, p. 40). For the purpose of the study, this guiding vision can also be seen as the trainer's orientation to training, for example using an andragogic approach.

Dunn and Dunn (1979) identified training style as the attitudes that trainers hold towards various instructional programmes, methods and resources as well as the trainees they prefer working with. This idea is partly reflected in Huelsman's definition which states that training style consists of a "...complex of personal attitudes, traits and behaviours and the media used to transmit to or to receive data from learners" (cited in Heimlich and Norland, 1994, p. 41). Conti (1985) also refers to traits in his definition, stating that style means consistent, overall traits and qualities.

Fischer and Fischer (1979) used style to refer to a pervasive quality in the behaviour of an individual. This quality in the behaviour is described as being persistent although the content may change. This concept was also echoed by Gauld (cited in Heimlich and Norland, 1994, p. 41). He defined training style as "the consistent way a trainer organises and delivers a body of knowledge".

Kozma, Belle and Williams define training style as "a relative consistent set of responses to similar teaching tasks" (cited in Behr, 1987a, p. 26). In addition to this, Solomon and Miller suggest that style is "a pattern composed of class-room behaviours...which are consistent over time and which distinguish one trainer from another" (cited in Heimlich and Norland, 1994, p. 41).

Heimlich and Norland (1994) describe training style as having distinctive qualities that suggest appropriate behaviour for the trainer. "Style has to do with form rather than content, process rather than product" (Heimlich and Norland, 1994, p. 40). Furthermore, it includes the implementation of the guiding vision (orientation to training) and contains evidence of, beliefs about, values related to and attitudes towards all the elements of training.

These two authors assert that how a trainer trains is the product of all facets of his/her life. They identify training style as a function of an individual's experiences, ethnicity, education, likes and dislikes, and other individual traits. Therefore, training style is the way in which the trainer uses all these facets to consciously conduct a training-learning exchange (Heimlich and Norland, 1994). Furthermore, it is strongly suggested that a trainer's personality also influence the way they train (Rushton, Murrau and Paunonen, 1983 cited in Behr, 1987b; Poon Teng Fatt, 1993; Thompson, 1997; Walklin, 1990).

For the purpose of this study, training style is defined as:

- a consistent set of responses (personal attitudes, orientation, traits and behaviour) that distinguishes one trainer from another and is used by the trainer in order to transmit information to trainees although the content may change.

2.5.2 Training style and instruction

It is often implied that training style *is* instruction or vice versa. Therefore, in order to avoid any confusion about these two concepts, it is essential to explain the difference between training style and instruction. In order to highlight this difference it is necessary to distinguish between training style and training role.

According to Zastrau (1986) the roles of a trainer refer to the duties that he/she can fulfil in the training situation. As explained in section 2.4.2.5, instruction represents one of these roles. However, depending on the job description, it is sometimes expected of the trainer to *simultaneously* fulfil various roles, for example that of an instructor, course developer and transfer agent.

Furthermore, Heimlich and Norland (1994) describe behaviour such as presenting information (instruction), facilitating discussion, structuring learning opportunities, planning subject matter and conducting learning activities as related to training style. Thus, training style can include instruction but is much more than just that. When contrasting training style and training roles, style can be described as indicative of the different ways that a certain role can be performed (Zastrau, 1986).

2.5.3 Classification system of training styles

In describing training styles, many researchers and theorists have developed classification systems (Axelrod, 1970 cited in Heimlich and Norland, 1994; Broadbent, 1998; Fischer and Fischer, 1979; Hay, 1992; Jarvis, 1985 cited in Heimlich and Norland, 1994; Lenz, 1982 cited in Heimlich and Norland 1994; Nuthall and Snook, 1973; Robinson, 1994; Rogers, 1986; Zastrau, 1986). These categorical structures are often similar in appearance.

In this study, categorical structures for training style are also created but with a slight difference. Differing from other research, pedagogy and andragogy are used as the basis for creating the different types of training styles. Section 2.3 explained the two approaches, namely pedagogy and andragogy that can act as the guiding principles when training adults. For the purpose of this study, it is stated that pedagogy and andragogy are the two main orientations that a trainer can use in conducting training.

Therefore, these two orientations represent the foundation of the classification system used in this research.

Within the framework of pedagogy and andragogy, training style is categorised in terms of preference-training style or inferior-training style. The trainer's orientation then serves as the source from which the training style develops. Table 2 shows this conceptualisation. The terms *preference-training style* and *inferior-training style* were developed specifically for the purposes of this research. Therefore, it is essential to create a clear understanding of these terms.

2.5.3.1 Definition of preference-training and inferior-training styles

a) Preference-training style

This concept relates to one of the four personality functions, namely the dominant function as identified by Myers and Briggs (cited in Quenk, 1993). Accordingly, this function represents what an individual wants to devote his attention and activity to most of the time. Therefore, individuals tend to use their dominant function primarily in their preferred attitude or orientation of energy.

When applying this conceptualisation to the training situation, the preference-training style is the type of style that a trainer employs spontaneously and it demands little extra psychological effort. Therefore, this is the style that the trainer finds himself the most comfortable in and he has very little or no trouble in applying it.

b) Inferior-training style

This concept, as an alternative to the preference-training style, was derived from the work of Jung (cited in Moller, 1995). Central to Jung's theory of personality is the conceptualisation of archetypes. He describes archetypes

as predispositions or universal thought patterns or images that influence the functioning of the personality as well as behaviour. However, the extent of this influence depends on the development of the archetypes. (Moller, 1993)

Furthermore, he identified the shadow as one of the archetypes that represents the more beastly side of man. The shadow involves emotions and behaviour that are irreconcilable with the individual's personality (Meyer, Moore and Viljoen, 1988). Thus, the shadow can be seen as the more "negative" side of the human personality. In popular Freudian terms, it is similar to a person's "alter-ego" (Westen, 1996). According to Jung (cited in Meyer et al., 1988) the shadow is one of the strongest developed archetypes. Therefore, it definitely has an impact on an individual's personality and behaviour.

Quenk (1993), Briggs-Meyers and McCaulley (1985) used this shadow component of Jung in order to define the inferior function of the personality. Quenk defined this function as: "the opposite of the dominant [personality] function, also called the fourth function or least preferred function" (1993, p. 278). This personality function is assumed to be nearest to the unconscious and is the least differentiated. Consequently, this function is sometimes called the hidden part of the personality. Thus, the inferior function of the personality is experienced as uncomfortable and distressing (Quenk, 1996). The implication of this is that, when moving into this function, it causes fatigue due to the extra psychological effort it requires.

Although they are not the same concept, Quenk (1993) explains that the relationship between the inferior function (of the personality) and the shadow is very important. The shadow is the archetype that personifies those things that people would rather not acknowledge about themselves. Therefore, it supplies the personal contents that appear when the inferior function is evoked. According to Quenk "metaphorically, the inferior function is the

skeletal form and the shadow is the flesh that gives it substance and life" (1993, p. 52).

When applying this to the training situation, it is possible to identify a training style that is opposite to the preferred style. Therefore the inferior-training style can be defined as:

- an alternative to the preference-training style
- exercised in a forced and unnatural manner that
- provokes the appearance of stress and increased psychological effort which then in turn
- may influence the trainer's performance negatively.

2.5.3.2 Implication of the new concepts

The necessity for these two concepts namely, preference and inferior-training style is to be able to categorise trainers firstly according to which style they are comfortable in showing while training (preference-training style), and secondly, according to which training style they apply with effort (inferior-training style).

Not everybody is comfortable in using the principles of both the pedagogic and andragogic orientations to the same extent. According to Walklin (1990) this can be ascribed to the fact that trainers' personalities differ. For an individual to feel comfortable with himself, it is important to act true to his personality. Thus, the extent to which a certain orientation is practised is likely to depend on the trainer's personality. Personality then in turn influences how comfortable a trainer is in applying particular principles.

When identifying behaviour that a trainer prefers to use, it is only logical to assume that in contrast to this, there is certain behaviour that he/she prefers not to use. This behaviour can then be seen as being part of the inferior-training style. However, when deciding to use this behaviour, it requires extra psychological effort and preparation since the trainer is less

comfortable in applying it. Therefore, in using concepts like preference-training and inferior-training style it is possible to make the classification of trainers more sophisticated.

2.5.3.3 The five developed training styles

For the purpose of this study, five types of training styles have been developed (table 2). All of them can be linked to either or to both of the two training orientations namely pedagogy and andragogy. While the behaviour in each style is not mutually exclusive, each style emphasizes a dominant mode of the trainer.

Several researches have identified similar training styles and will be incorporated in the explanation of the developed styles. The probable appropriateness of each style will also receive attention.

Table 2: Types of training styles

Orientation of trainer	**Manifested training style**
Only pedagogy	A. Pedagogical
Pedagogy and andragogy	B. Ped.: preference; And.: inferior
Pedagogy and andragogy	C. Flexible (no preference or inferior style)
Andragogy and pedagogy	D. And.: preference; Ped.: inferior
Only andragogy	E. Andragogical

a) Style A

This style involves the use of only pedagogical principles to guide the trainer while engaging in the training of adults. Since there is no consolidation or manifestation of andragogy, it is safe to assume that pedagogical principles are preferred. Various researchers identified training styles similar to Style A (Conti and Welborne, 1986; Fischer and Fischer, 1979; Robinson, 1994).

However, the problem with using just the pedagogical orientation is the probability that the trainer lacks the ability to apply principles of the other orientation. The implication hereof is that the trainer will apply this orientation to every training situation even if it is to the disadvantage of both the learner and the trainer. If the pedagogical approach is unsuitable for the situation, learning will probably be ineffective and the transfer of new knowledge and skills by the learner will be unsuccessful. Consequently, this leads to negative feedback to the trainer, which in turn causes the experience of stress.

b) Style B

Using this style, a trainer is more comfortable in using pedagogical principles than andragogical principles. Similar to this is the content-centred style described by Robinson (1994) where, for example, the trainer usually prescribes the materials to be learned although trainees are sometimes asked to make a contribution. This, however, does not take into account the characteristics of an adult learner.

As explained before, adults want to be treated with respect, and the incorporation of their experience is vital. Since andragogy only features as the inferior-training style, the trainer is likely to seldom display the behaviour that is appropriate for adult learners. As in the case of Style A, the effectiveness of the learning is likely to suffer, which in turn leads to negative

feedback on the training course. Moreover, this can then lead to the additional experience of stress by the trainer.

c) Style C

This style can be described as the ideal style used in training. This type of trainer is comfortable in using the principles of both orientations with ease. However, the application of the orientations' principles is dependent on the requirements of the situation. Conti and Welborne (1986) as well as Robinson (1994) identified similar styles namely "mixed styles". These styles imply the combination of training behaviours, which draw elements from both orientations. Therefore, Conti (1985) describes it as the collaborative mode where the emphasis is on what the learner is doing. According to Conti, "...the trainer's primary task is to organise and maintain an environment which facilitates learning" (1986, p. 7).

It is often asserted that trainers should adapt their training style to the learning styles of the trainees. Broadbent describes the elite trainer as a person who "...adjusts to meet the learners' levels of knowledge and preferred styles" (1998, p. 72). According to this approach, it is expected of the trainer to serve all learners equally by adapting methods, techniques, situations and activities to the individual learner (Rinke, 1985). This conceptualisation strongly relates to the contingency approach to management of Hersey and Blanchard.

Hersey and Blanchard (1977) explains that the more managers adopt their style of leader behaviour to meet the particular situation and needs of their followers, the more effective they will tend to be in reaching personal and organisational goals. When applying this to the training situation, it requires of the trainer to act according to the situation and the needs of the trainees. Thus, if a trainer is comfortable in applying any principle according to the requirements of the situation, then Style C can be described as the ultimate training style (Conti, 1985).

d) Style D

An andragogical preference-training style and pedagogy as the trainer's inferior-training style characterise this style. This implies that the trainer mostly acts accordingly to andragogical principles but sometimes incorporates pedagogy. Robinson (1994) also identified a comparable style called the people-centred style. He describes this style as being in between the highly people-centred style and the most flexible style.

According to Knowles (1978), andragogy is the preferred mode of training when dealing with adults. Since this is the trainer's preference and adults are the focus of training, this type of style involves less psychological effort. However, this style also includes an inferior-training style namely pedagogy. This implies that somewhere during the training period, the trainer acts unnaturally. Although the trainees may benefit from the incorporation of pedagogical principles, the trainer can experience a certain amount of stress, since he is moving into his inferior-training style.

e) Style E

This style involves the use of only andragogical principles to guide the trainer while training. Therefore, it is safe to assume that this is the trainer's preference style since there appear to be no incorporation and manifestation of any other orientation. Robinson (1994) identified a similar style called the highly people-centred teaching style. Fischer and Fischer (1979) also created a style namely the learner centred style which can be related to Style E. Accordingly, the trainer for example presents problems, has an informal approach and includes social activity. Furthermore, the trainer perceives himself as interested in stimulating discussion and seeing others grow.

However, this style is likely to result in the same problem that is anticipated for Style A. It is possible that a trainer using only andragogy to conduct training, lacks the ability to apply principles of the other orientation.

Moreover, this will lead to the application of andragogy to every training situation even if it is to the disadvantage of both the learner and the trainer. Thus, the effectiveness and transfer of the learning will be at stake. This, in turn, leads to negative feedback to the trainer, which then increases the experience of stress.

These five developed training styles form an important part of this research. Chapter one (section 1.2) explained that the trainer and more specifically training style, are neglected areas in the field of training. Thus, the development of the above training styles is an attempt to give attention to the lack of information on the trainer.

Furthermore, in section 2.5.1 a variety of factors were identified that influence the training style of a trainer such as, experience, ethnicity etc. However, this study focuses on training style as a possible function of the individual's personality. Thus, personality coupled with training style, are the two prominent features in this study. It is therefore necessary to define the term personality for the purpose of this research.

2.6 Personality

Moller (1995) states that there is a complex interaction between the characteristics of a particular person. "Man functions as a whole, and it is in this *totality* of characteristics, both physical and psychological, that a person's uniqueness lies..." (Moller, 1995, p. 3). The psychology of personality is therefore concerned with understanding the total person, giving due to consideration to individual differences between people. Having stated the importance of the psychology of personality, this section deals with the definition personality. Furthermore, attention is also given to the personality theory that is most relevant to this study.

2.6.1 Definition of personality

Within the field of personality psychology, there seems to be no agreement on what exactly the term personality implies (Mischle, 1976, Moller, 1995). Despite divergent definitions of personality, Moller (1993, p. 6) identified certain themes that appear to be coinciding namely:

- Personality describes the distinguished structure, combination and organisation of behaviour patterns, thoughts and emotions that make every individual unique.
- Personality refers to the dynamic nature of the individual as well as his tendency to respond to a variety of situations with a degree of consistency or prediction over time.

Given the broad definition of personality, it is important to realise that personality can be approached and studied according to various perspectives namely (Westen, 1996):

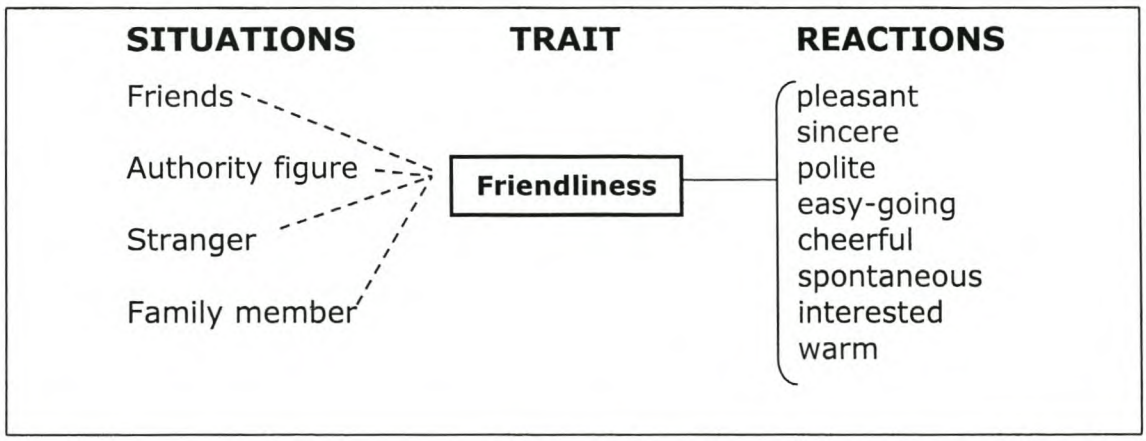
- Psycho-dynamic perspectives (Freud, Jung, Adler)
- Behaviourist perspectives (Pavlov, Skinner, Bandura)
- Humanistic perspectives (Rogers, Maslow, Frankl)
- Biological and trait perspectives (Allport, Eysenck, Cattell, Guilford)

For the purpose of this research, the trait perspectives will represent the broad basis of the personality component.

2.6.2 Trait perspectives on personality

Trait theories of personality have been largely derived from the words people use to classify themselves and others in their everyday lives. Adjectives such as shy, devious, manipulative, open or friendly are some examples of the words people use to describe themselves and others.

Gordon Allport was an influential personality theorist who viewed these words as traits, which he defined as a predisposition to respond consistently to a variety of stimuli (Zimbardo, McDermott, Jansz and Metaal, 1995). He described traits as the building blocks of the personality and the source of individuality. According to Allport, traits form the structure of personality, which, in turn, determines an individual's behaviour. This conceptualisation is graphically displayed in figure 3.



(adapted from Moller, 1993, p. 312)

Figure 3: A Personality trait

Strongly related to the trait theory, are the factor-analytical theories of personality. Both types of theories regard personality traits as the basic element of personality (Meyer et al., 1988). However, factor-analytical theories consider personality traits as constructs that are assembled according to the rules of factor analysis methodology. Factor analysis is a statistical technique to discover underlying categories from a larger amount of data. These categories are then used in order to describe and possibly explain this data.

Therefore, factor analysis results in factors that represent the basic elements of personality, namely personality traits (Meyer et al., 1988). According to Meyer et al. (1988), Guilford, Eysenck and Cattell are considered the most

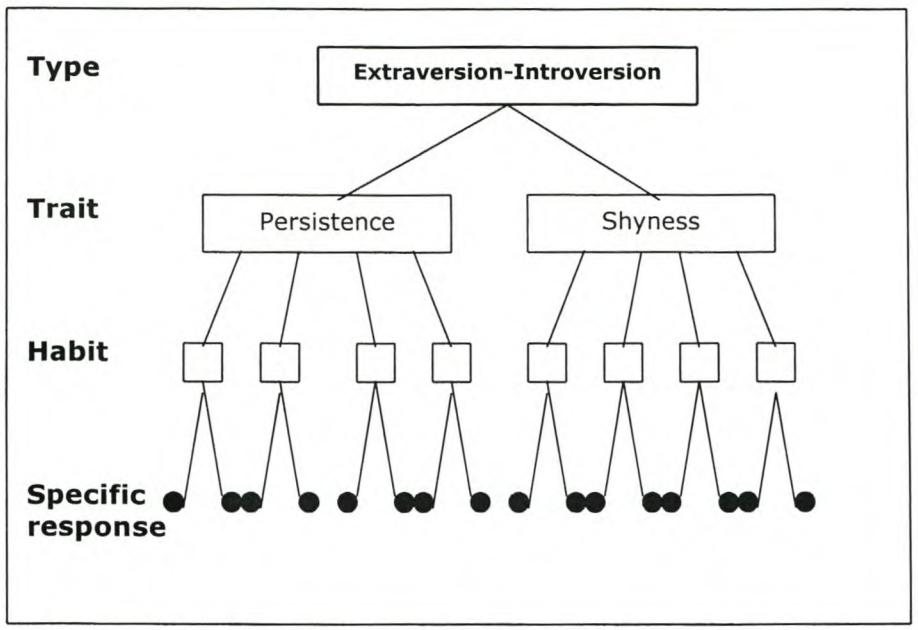
important factor theorists in the field of personality psychology. The nature of this research requires the explanation of the work of Eysenck and more importantly that of Cattell.

2.6.3 Factor analytical theories of personality

2.6.3.1 The structure of personality

Cattell as well as Eysenck identified traits as the basic structural elements of personality (Moller, 1993). Eysenck, however, concentrated on the identification of personality dimensions rather than the classification of personality traits. He proposed a model that links personality types (dimensions), traits and behaviour into a hierarchical system (Zimbardo et al., 1995).

At the lowest level of the hierarchy are single responses such as acts. When they occur regularly, they combine to form sets of habitual responses at the next level. In turn, correlated habitual responses form traits at the third level. Lastly, correlation among traits form types at the top level. This conceptualisation is graphically displayed by means of an example (figure 4).



(adapted from Westen, 1996, p. 468)

Figure 4: Eysenck's model of personality

Cattell, on the other hand, concentrated on the second level namely personality traits. He defined traits as a fairly permanent and broad behaviour tendency that can be observed (Meyer et al., 1988). In order to understand Cattell's work, it is necessary to explain his ultimate goal, namely to predict behaviour by considering all (personality) factors that can influence it. To reach this goal, Cattell used factor analysis that resulted in the identification of source traits and surface traits (Moller, 1993).

Cattell (cited in Baron, 1996) described source traits as the key entities of personality that underlie many other traits, called surface traits. Meyer et al. (1988) interpret these surface traits as coincidental and fluctuating groupings of observable characteristics of people. For these traits, there exist specific words, such as friendliness or aggressiveness. Furthermore, by using factor analysis, Cattell (cited in Moller, 1993) discovered sixteen source traits, also called first order factors, that influence the observability of the surface traits.

These sixteen first-order factors formed the basis of Cattell's questionnaire called the 16-Personality Questionnaire (16-PF). This is illustrated in table 3 where the high and low scores represent the extremes for each source trait. A further factor analysis of these sixteen first-order factors led to the identification of several second-order factors. The most widely used second order factors are displayed in table 4 along with the description in terms of the first-order factors.

Table 3: Cattell's sixteen first-order factors of personality

LOW SCORE (Surface trait)	**FACTOR** (Source trait)	**HIGH SCORE** (Surface trait)
Cool, reserved	A	Warm, easy-going
Less intelligent	B	More intelligent
Easily upset	C	Calm, stable
Not assertive	E	Dominant
Sober, serious	F	Happy-go-lucky
Expedient	G	Conscientious
Shy, timid	H	Venturesome
Tough-mined	I	Tender-minded
Trusting	L	Suspicious
Practical	M	Imaginative
Forthright	N	Shrewd
Self-assured	O	Apprehensive
Conservative	Q_1	Experimenting
Group-orientated	Q_2	Self-sufficient
Undisciplined	Q_3	Self-disciplined
Relaxed	Q_4	Tense, driven

(adapted from Baron, 1996, p. 389 and Moller, 1993, p. 319)

Table 4: Second-order personality factors within normal adults

Second order factor	Description in terms of first order factors
I Extraversion	Social (A+), carefree (F+), venturesome (H+), group-dependent (Q_2-)
II Anxiety	Easily upset (C-), shy (H-), suspicious (L+), apprehensive (O+), undisciplined (Q3-), tense (Q_4+)
III Tough Poise	Reserved (A-), tough-minded (I-), practical (M-)
IV Independence	Dominant (E+), experimenting (Q_1+), self-sufficient (Q_2+)
V Compulsivity	Conscientious (G+), Controlled (Q_3+)

(adapted from Meyer et al., 1988, p. 318)

Second-order personality traits are therefore broad response tendencies that influence behaviour via an interaction of the original group of traits (Moller, 1993). The second-order factors, together with the source traits, are the aspects of personality that are measured by the Sixteen-Personality Factor Questionnaire (16-PF). This measuring instrument is one of the central components of this research. Thus, this study relies strongly on the work of Cattell concerning personality traits and the identification thereof.

2.7 Recent research on the relationship between pedagogical and andragogical training style and personality

Various studies have been conducted in order to identify the training orientations of trainers or adult educators. Katz, Kerwin, Holmes, Hopkins and Jones (in Davenport and Davenport, 1985b) have studied andragogical-pedagogical orientations of adult educators in a variety of settings. Hadley (1975) used the assumptions underlying these two orientations and operationalised them into a construct measurable by an educational orientation scale.

Furthermore, a limited amount of research has been done on training styles that can be correlated with andragogy and pedagogy. Conti and Welborn (1986), Conti (1985) and Robinson (1994) identified training styles that can be associated with the principles of both andragogy and pedagogy. Robinson identified five categories on a continuum ranging from "highly content centered" to "highly people centered" (1994, p. 57). Although Robinson (1994) identified five categories of training style, the two styles between the extremes and the middle style, do not receive much attention.

In 1985 Conti designed the Principles of Adult Learning Scale (PALS) in order to measure training style. However, this scale reflects only three styles, namely a learner-centered approach, a combination approach and a teacher-centered approach. Therefore, except for Robinson's vague classification, there exists no clear structure of at least five training styles based on the two identified orientations to training. Consequently, there exists no measuring instrument in order to categorise trainers according to five possible training styles as developed in section 2.5.3.3.

Although Erdle, Murray and Rushton (1985) found that the personality of a trainer influences the training effectiveness, very few studies have addressed this topic. In his research about trainer competency and psychological

optimisation, Cilliers (1996) compiled a personality profile of the competent trainer. Although this profile was compiled with intrapersonal and interpersonal behaviour characteristics, no personality tests were incorporated in the identification of these characteristics. In a study examining connections between personality type and excellence in teaching, Provost, Carson, and Beidler (cited in Thompson, 1997) found that teachers cited for excellence tended to teach in ways consistent with their own personality types.

However, no studies were found that investigated the relationship between a specific training style and the trainer's personality. Therefore, the purpose of this study is to address this issue.

2.8 Summary

This chapter forms the basis of the study since it confronts the theoretical side of the issues at hand. Consideration has been given to the adult learner in order to formulate a definition of the people trainers are dealing with. This was followed by an in-depth explanation of the principles of the two identified orientations to training, namely pedagogy and andragogy. Since trainers apply these orientations, the trainer was the next aspect that was discussed. Attention has therefore also been given to the definition of trainers and training, as well as the roles that trainers can fulfil.

Subsequently the attention shifted to the training style of trainers. The difference between training style and training role was highlighted. Moreover, five types of training styles were developed for the purpose of this study. Several aspects were identified as influencing the manifestation of a trainer's training style. Considering that this study focuses on the influence

of personality, attention was given to the trait perspective and factor-analytical theories of personality.

Since this study concentrates on the relationship between pedagogical and andragogical training styles and personality, the chapter ends with recent research regarding this issue.

It is evident that this theme has not been addressed before. Therefore, chapter three attends to the problems concerning the lack of research on this topic. Subsequently, the problem formulation is followed by the research hypothesis.

CHAPTER 3

PROBLEM FORMULATION

3.1 Introduction

The previous chapter explained in detail the theories that underlie this research. Furthermore, a section (section 2.7) was devoted to the description of previous studies done on this particular aspect of training. It was concluded that existing research on training style and personality is unequipped to deal with the dynamic and complex nature of modern organisations. Therefore, chapter three deals with the problem that forms the basis of this study, namely the lack of information on the relation between the training style and personality of a trainer.

3.2 Formulating the problem

As explained in chapter one, South African organisations will be required to pay 1% of their salary account in the form of a training levy as from 1 April 2000. This legislation, implemented by the South African government, will evidently result in an increase of training activities in organisations. Therefore, it is clear that training will become an integrated component of all organisations.

Furthermore, training cannot exist without someone performing the training. The role of the trainer therefore also becomes an increasingly important function within organisations. Trainers play an important part in the success of training (Conti and Welborne, 1986; Russ, 1994; Zastrau, 1986). For training to be effective, the trainer needs to be responsible for "packaging" the necessary information to the benefit of the trainees (Dastoor, 1993; Hiemstra and Sisco, 1990). In doing this, the

trainer demonstrates a certain training style, which was explained in section 2.5.

The training style of trainers is an issue in the field of training that has not received much attention in the available literature (Heimlich and Norland, 1994). Consequently, the way trainers transfer the necessary skills and knowledge to trainees receives less consideration. Since the training style of trainers sets the tone for the learning process (Russ, 1994), it is an issue that must be addressed. Not addressing this problem can result in ineffective training which, in turn, increases costs and thus influences the productivity of an organisation.

Furthermore, Davenport and Davenport (1985a) as well as Conti (1985) state that trainers should be aware of their own orientation to training. Since a trainer's training style flows from his/her orientation (section 2.5.3), this could affect their training. In order to ensure the effectiveness of training it is therefore important to create an awareness in trainers regarding their training style. According to Conti (1985) knowledge of one's own style can help in identifying areas of strength and areas for future development. One way of creating this awareness is by means of helping trainers to identify their own training style. This poses a problem since, in South Africa, there exits no means by which a trainer's style can be classified according to his/her orientation to training.

According to Heimlich and Norland, training style comes from "who I am" (1994, p. 13). Accordingly, as also indicated in the previous chapter (section 2.5.1), it has been suggested that the personality of the trainer could be regarded as an influential factor concerning training style (Heimlich and Norland, 1994; Poon Teng Fatt, 1993; Erdle et al., 1985; Thompson, 1997; Walklin, 1990). Poon Teng Fatt proposes that "...trainers show their personalities through the way they teach" (1993, p. 21). However, no research has ever statistically established the relationship between the training style and personality of trainers. Thus, the rest of the chapter focuses on the potential benefits that are dependent on the suggestions made in this paragraph as well as in

chapter two, namely that personality influences the training style of trainers.

Caudron (1997) supports the attention given to personality in claiming that today's competitive labour market should encourage employers to realise that personal characteristics are as important as technical skills and experience. Since the cost associated with hiring is so tremendous, it makes sense to assess the candidates as thoroughly as possible. Consequently, personality tests are frequently used as part of recruitment and selection processes in a variety of occupations (Blazzard and Hasenauer, 1996; Caudron, 1997; Divita, 1997; Hancock, 1998; Kamp and Krause, 1997; Miller and Furnham, 1998; Rose, 1997; Tucker, 1998). These tests enable organisations to get a glance of the sort of person they are dealing with (Schofield, 1972). Not only does personality testing reveal more about the candidates, it can also be instrumental in order to make the selection process more sophisticated.

Cattell, Eber and Tatsouka (1992) explained that it is possible to use the 16- PF in order to construct a personality profile that is regarded as the most suitable profile for a specific occupation. In doing this, a comparison can be made between this profile and the candidates' personality profiles. This type of comparison helps the organisation to identify the candidate most suitable for performing a certain job.

However, in applying this conceptualisation to the training situation it is found that the recruitment and selection processes of trainers have not yet reached this level of sophistication. Having established the importance of the trainer's personality concerning his/her training style, it is evident that organisations will benefit from using personality profiles when selecting a new trainer. Personality profiles of trainers will enable organisations to select the most suitable trainer according to the type of training style that is required. Before personality profiles of trainers can be used this way, however, the necessary hypothesis must be investigated.

3.3 Research hypothesis

The following hypothesis will be tested:

Research hypothesis: There exists a systematic relationship between a trainer's personality and the manifestation of his/her training style.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 Introduction

Along with the trainees and learning content, trainers have a definite influence on training because of their training style (Conti, 1985; Conti, 1986). However, in South Africa, the trainer has never been researched as one of the important factors that have an effect on training. Research has been done on the characteristics of the adult trainee (Knowles, 1978) in order to assist the trainer when developing training programmes. Thus, consideration has been given to other elements of the training situation, but the trainer can be identified as the factor that has received the least attention.

This chapter focuses on the processes and statistics used in order to attend to the lack of research done on the trainer. Several statistical elements are highlighted, for example the development of a questionnaire to measure the training style of a trainer. The chapter also includes statistical hypotheses and the description of the methods used to properly investigate these hypotheses.

Therefore, this research can be seen as a pilot study in order to help trainers and organisations to make their training more effective. This study will enable trainers to identify their own training style, which will make it easier to improve in that area if necessary. Furthermore, organisations can properly identify trainers that will suit their needs. Thus, the information gathered by means of the following questionnaires will enable organisations to streamline the selection and employment of new trainers.

4.2 Measuring instruments

For the purpose of this study, three questionnaires were used. The following questionnaires were administered, and a detailed explanation will follow:

- Demographic questionnaire
- Training Style Inventory
- Sixteen personality factor questionnaire (16-PF)

4.2.1 Demographic questionnaire

The demographic questionnaire is the shortest of the three questionnaires and consists of seven questions (Appendix A). The questionnaire was mainly constructed according to the research done by Davenport and Davenport (1985a). They concluded that the orientation of a trainer might vary by gender, discipline (subject areas), institutional setting (type of organisation) and age.

Furthermore, three of the seven questions are free-response questions. Oppenheim (1992) explains that although free-response questions are often easy to ask, they are difficult to answer and more difficult to analyse. However, the free-response questions were justified by the necessity to identify the demographic aspects as accurately as possible. Afterwards, a classification process known as coding was used whereby a system of categories, called a coding frame, was identified (Oppenheim, 1992).

Thus, for each of the three free-response questions, a coding frame was structured. Since the structuring of coding frames for questions three and six were uncomplicated, they do not require an explanation. However, for the purpose of the analysis procedures following in chapter five, it is necessary to explain the coding frame of question seven.

This question tried to capture the field of training by means of asking the subject areas in which the trainer do the most training. All the different types of subject areas were coded according to the following three categories namely, soft skills, hard skills and a category that includes both types of skills. The reason for doing so is shortly explained in section 4.2.1.1.

4.2.1.1 Hard and soft skills

According to Geaney (1995) and Rough (1994) the core competencies in the corporate market could be divided into two categories namely, hard and soft skills. Geaney (1995) explains that soft skills include aspects like visible leadership, flexibility, sound business judgement and trustworthiness. Correspondingly, Rough (1994) consider integrity, listening skills or level of caring and quality as so called soft skills.

Clark define soft skills as "skills needed to perform jobs where job requirements are defined in terms of expected outcomes, but the process (es) to achieve the outcomes may vary widely. Usually, an area of performance that does not have a definite beginning and end (i.e. counselling, supervising and managing)" (1999, p. 17). Strebler identified soft skills as interpersonal skills "...that may cover all aspects of relating to and with other individuals." (1997, p. 23). She also listed several skills that organisations view as soft skills. However, for the purpose of this research, soft skills were defined as skills needed to perform jobs where achievement depends on all aspects of relating to and with other individuals.

On the other hand, hard skills include aspects like project definition, planning processes and controlling processes (Geaney, 1995) as well as learning to operate machines (Rough, 1994). The following definition of hard skills were accepted for the purpose of this study: "...skills to perform where job requirements are will defined in terms of actions to be taken and expected outcomes." (Clarke, 1999, p.33).

4.2.2 Training Style Inventory (TSI)

The Training Style Inventory was specifically designed for the purpose of this research in order to assess the training style of trainers (Appendix B). This measuring instrument was developed by using the Principles of Adult Learning Scale (PALS) of Conti (1985) and the Educational Orientation Questionnaire of Hadley (1975). Furthermore, the theoretical framework of this study also played a key role in the development and refinement of the questionnaire items.

4.2.2.1 Factors in the Training Style Inventory

The underlying structure of the Training Style Inventory consists of seven factors. This structure was inherited from the Principles of Adult Learning Scale developed by Conti in 1985. According to Conti (1985), a variety of factors will influence a trainer's style. However, he identified seven factors that he considered to be the basic influential factors. Each of these factors is measured by certain items in the questionnaire (figure 5). Therefore, each item in the instrument relates to one of the following factors:

a) Learner-centered activities

The first factor in the Training Style Inventory is the learner-centered activities. This factor consists of seven negative items and two positive items. The items relate to evaluation by formal tests and a comparison of students to outside standards. Trainers who support a pedagogical training style prefer formal testing rather than informal evaluation techniques. They exercise control of the training venue by taking disciplinary action and selecting all the materials and activities for the trainees beforehand.

However, trainers who prefer a more andragogic approach, practise behaviours that allow initiating action by the trainees. According to Conti (1985), this encourages trainees to take responsibility for their own learning.

b) Personalising instruction

The second factor, namely Personalising instruction, consists of three negative items and five positive items. Trainers who prefer an andragogic approach concerning this factor, base their objectives on the specific training groups' abilities and motives. They also tend to use a variety of training techniques and material, and thus lecturing is viewed as a poor technique for presenting subject material to the adult learner (Conti, 1985). Furthermore, co-operation rather than competition is encouraged.

c) Relating to experience

The third factor of the Training Style Inventory consists of five positive items. Trainers who have a preference for the andragogic training style, plan learning activities that take into account their trainees' prior experiences (Conti, 1985). Furthermore, they encourage the trainees to relate the new learning to prior experiences. To make learning relevant, this type of trainer also organises learning opportunities according to problems that the trainees encounter in everyday life. Trainees are even encouraged to ask questions about the nature of their society. Relating this to experience, Conti (1985) explains that such consciousness-raising questions can nurture the trainees' growth from dependence on others to greater independence.

d) Assessing student needs

The fourth factor consists of three positive items. Conti (1985) concludes that treating a trainee as an adult implies finding out what the trainee wants and needs to know. Furthermore, the andragogic-orientated trainer also assists the trainees in developing short-term as well as long-term objectives.

e) Climate building

Factor 5 is Climate building and it contains six positive items. According to Knowles (1970), the setting of a friendly and informal climate is the first step in the andragogical model. Trainers who score high on this

factor encourage dialogue and interaction between trainees. They also allow periodic breaks during training sessions. Conti (1985) also highlights the fact that barriers to learning can be eliminated by utilising the knowledge and skills that adults already possess as building blocks to achieve training objectives. Furthermore, risk-taking and experimenting are permitted, while errors are accepted as a natural part of the learning process (Conti, 1985). Thus, failures serve as "a feedback device to direct future positive learning" (Conti, 1985, p. 10).

Such an environment as described above, allows trainees to experiment and explore elements related to their self-concept, to practise problem-solving skills and to develop interpersonal skills (Conti, 1985).

f) Participation in the learning process

The sixth factor of the Training Style Inventory consists of four negative items and three positive items. Conti (1985) states that while Factor 1 addresses the broad location of authority within the training venue, this factor focuses on the amount of involvement of the trainee. Trainers with a preference for andragogic principles, allow the trainees to identify the problems they wish to solve. Trainees can also participate in making decisions about the topics that will be covered in the training sessions. Furthermore, the andragogical-orientated trainer involves the trainees in developing the criteria for evaluating their performance.

g) Flexibility for personal development

The last factor of the Training Style Inventory is called Flexibility for personal development and consists of three negative items and one positive item. Trainers who favour a more pedagogic-orientation towards training, view themselves as providers of knowledge rather than facilitators. They also keep to the training objectives regardless of the idiosyncrasies that may arise from divergent trainee needs (Conti, 1985). Furthermore, a well-disciplined classroom is regarded as a stimulus for learning and the discussion of controversial subjects is avoided.

On the other hand, the more andragogical-orientated trainer rejects this rigidity and lack of sensitivity to the individual. Conti (1985) explains that they view personal fulfilment as a central aim of training. This implies flexibility in the sense that the training environment and curricular content change in order to accommodate the changing needs of the trainees.

For the purpose of this research, these seven factors are viewed as first-order factors that combine in a single second-order factor namely training style. This study exclusively focuses on the second-order factor.

4.2.2.2 Items of the Training Style Inventory

The items of this questionnaire can be described as direct and closed statements. Thus, participants are forced to provide answers within a previously established response framework. According to Oppenheim (1992) the closed questions can ensure the comparison of the results of different individuals. Furthermore, it ensures that all the participants consider the same problem or scenario. Schreuder (1995) also states that closed questions ensure greater uniformity of measurements, which can contribute to a higher reliability.

4.2.2.3 Scoring of the Training Style Inventory

The Training Style Inventory consists of 42 items and can be described as a summative rating scale using a Likert scale that range from never to always. There are five possible answers for each questionnaire item namely: never, seldom, sometimes, frequently and always. The maximum value that can be scored on an item is 5, while the minimum value is 1. Furthermore, this instrument can be completed in 10-15 minutes.

Each item can be labelled as either positive or negative (figure 5). This has an influence on the scoring of the items since the positive and negative items are scored differently. The following values are assigned to the answers of positive items:

- Never: 1
- Seldom: 2
- Sometimes: 3
- Frequently: 4
- Always: 5

On the other hand, reversed scoring is used for the negative items (figure 5), namely:

- Never: 5
- Seldom: 4
- Sometimes: 3
- Frequently: 2
- Always: 1

Positive items:
Item number: 1, 3, 7, 9, 10, 11, 13, 14, 17, 18, 19, 20, 21, 22, 23, 25, 26, 29, 30, 32, 33, 36, 39, 40, 41.

Negative items:
Item number: 2, 4, 5, 6, 8, 12, 15, 16, 24, 27, 28, 31, 34, 35, 37, 38, 42.

Factor 1:
Factor 1 is measured by items 2, 11, 12, 19, 27, 28, 35, 37

Factor 2:
Factor 2 is measured by items 8, 22, 23, 30, 32, 34, 38, 39.

Factor 3:
Factor 3 is measured by items 4, 13, 29, 36, 40, 41.

Factor 4:
Factor 4 is measured by items 7, 10, 21.

Factor 5:
Factor 5 is measured by items 3, 9, 17, 18, 20, 26.

Factor6:
Factor 6 is measured by items 1, 14, 15, 16, 31, 33, 42.

Factor 7:
Factor 7 is measured by items 5, 6, 24, 25.

Figure 5: Scoring of the Training Style Inventory

4.2.2.4 The total score

The total score is obtained by adding the individual scores of each item in order to have a score within the 42-210 range. For the purpose of this study, it is assumed that the orientation to training style is normally distributed.

Based on the assumed normality of orientation to training style, five training style categories were identified as listed in table 5. Also listed in table 5 are the percentages awarded to each category under the assumption of a normal distribution. The implication hereof is that participants falling within the lowest 10% of the overall total scores will be classified as having a pedagogical approach to training. On the other hand, participants falling within the highest 10% of the overall total scores will be classified as having an andragogical approach to training.

These five categories constitute the five different training styles as explained in section 2.4.3. Therefore, the total score of the trainer is used in order to classify the trainer according to his/her training style (table 5).

Table 5: Scores and training styles

Percentage of total scores on the TSI	Training styles of trainers
Category 1: lowest 10%	**Style A:** Pedagogical
Category 2: next 20%	**Style B:** Ped.: preference; And.: inferior
Category 3: next 40%	**Style C:** Flexible (no preference or inferior style)
Category 4: next 20%	**Style D:** And.: preference; Ped.: inferior
Category 5: top 10%	**Style E:** Andragogical

4.2.2.5 Pilot studies

Since the Training Style Inventory is a newly developed questionnaire, two pilot studies were done in the Department of Industrial Psychology of the University of Stellenbosch. This was done in order to assist the researcher in the refinement of the questionnaire. The feedback of these studies resulted in important changes concerning the language and items of the questionnaire.

4.2.3 Sixteen-personality factor questionnaire (16-PF)

This measuring instrument is strongly rooted in the trait theory, which concludes that the human personality consists of traits that combine in unique individualised patterns. Thus, since the trait theory represents the basis of the personality component of the study, this questionnaire was incorporated in the study. The Sixteen-Personality Factor Questionnaire (16-PF) will be used in order to construct an average personality profile for the five types of training styles.

Cattell (cited in Smit, 1980) claims that the 16-PF measures the total personality. He further described this test as "... not a questionnaire composed of arbitrary scales, but consists of scales carefully oriented and groomed to basic concepts in human personality structure research. Its publication was undertaken to meet the demand of research psychologists for a personality-measuring instrument duly validated with respect to the primary personality factors and rooted in basic concepts in general psychology" (Cattell et al., 1992, p. 13).

The 16-PF is an adult-level test and is intended for respondents who are eighteen years of age or older (Graham and Lilly, 1984). Five types of forms are available when conducting the 16-PF, ranging from Form A-E. Forms A and B are considered equivalent, each containing 187 items. These forms also require the highest reading level, namely the reading of newspapers, and they take approximately 60 minutes to complete.

However, Form A was used during this study since it is regarded as the more reliable and extensively used form (Cattell et al., 1992).

4.2.3.1 Terminology

In describing the 16-PF, Cattell et al. (1992) accounted for two types of terminology. The first type is the technical names. These names are based on the scientific meanings of these factors, as it appears in the literature for example affectothymia vs. siztohymia for Factor A or ego-strength vs. ego-weakness for Factor C. This is also the terminology mostly used by professional psychologists. Cattell (cited in Graham and Lilly, 1984) assigned the technical labels to most scales to avoid confusion with trait names used in ordinary language.

Furthermore, there are the simpler, popularly descriptive labels for use in communicating with the lay public. Factor A, for example, can be described as "warm, outgoing vs. stiff, aloof" and Factor C as "stable, mature vs. emotional, ill-balanced" (Cattell et al., 1992, p. 15). This research concentrated on the use of these simpler and popular labels since this made it easier to communicate with the participating companies.

4.2.3.2 Symbol systems

Cattell (cited in du Toit, 1991) used two symbol systems in order to describe the dimensions or traits of the 16-PF. Each factor has a universal index number (U.I.). As mentioned, a popular term as well as a technical term can be used for a specific factor. Therefore, to avoid confusion, the universal index number ensures that the precise reference is still clear.

For further convenience, an alphabetical index was also incorporated. In order to do this, the factors were placed in order of the extent to which they influence the personality. Factor A is, therefore, the most influential factor measured by the 16-PF. Evidently, Factor Q_4 has the least influence in the personality structure (du Toit, 1991). Despite the two symbol systems, Cattell et al. (1992) stated that it is more usual to

indicate these factors conveniently by the briefer alphabetical symbols. Therefore, for the purpose of this research, the alphabetical index is used to refer to the sixteen factors.

4.2.3.3 First order factors

The following aspects need to be explained to give greater clarity to table 6. Firstly, although section 4.2.3.5 explains the scoring of the factors, it is necessary to state that a high score always corresponds with the description at the right of table 6. Thus, a low score will correspond with the description on the left-hand side.

Lastly, it is important to note that the factors of the 16-PF run from A to Q_4, omitting factors D, J and K. According to Cattell et al. (1992), these three rating factors have never shown up clearly enough in questionnaire measures to be systematically included.

Table 6: Cattell's sixteen first order factors of personality

LOW SCORE (Surface trait)	**FACTOR** (Source trait)	**HIGH SCORE** (Surface trait)
Cool, reserved	A	Flexible, easy-going
Less intelligent	B	More intelligent
Easily upset, avoid responsibility	C	Calm, stable attitudes
Submissive, diplomatic	E	Assertive, competitive
Serious, reflective, silent	F	Talkative, expressive
Self-indulgent, undependable	G	Responsible, determined
Withdrawn, considerate	H	Adventurous, impulsive
Realistic, self-reliant	I	Imaginative, insecure
Understanding, trusting	L	Suspicious, jealous
Practical	M	Easily absorbed in ideas
Spontaneous, naïve	N	Disciplined, ambitious
Self-confident, resilient	O	Feels inadequate
Conservative, postpone change	Q_1	Analytical, free-thinking
Group-orientated, joiner	Q_2	Resourceful
Act uncontrolled, careless of rules	Q_3	Self-control, persistence
Relaxed, composed	Q_4	Impatient, restless, tense

(adapted from Baron, 1996, p. 389 and Moller, 1993, p. 319)

4.2.3.4 Second order factors

As with the first order factors, the are several aspects that must be highlighted concerning the second order factors. Firstly, although Cattell et al. (1992) identified eight factors, just five featured in this research. According to Graham and Lilly (1984) these five factors are the only second order factors that have been studied sufficiently to justify their practical use. Secondly, the description of these factors is done in terms of the first order factors. Since second order factors consist of certain first order factors, table 7 gives the popular descriptive label of each of the relevant first order factors as well as an indication of the kind of sten required.

Table 7: Second order personality factors within normal adults

Second order factor	Description in terms of first order factors
I Extraversion	Social (A+), carefree (F+), venturesome (H+), group-dependent (Q2-)
II Anxiety	Easily upset (C-), shy (H-), suspicious (L+), apprehensive (O+), undisciplined (Q3-), tense (Q4+)
III Tough Poise	Reserved (A-), tough-minded (I-), practical (M-)
IV Independence	Dominant (E+), experimenting (Q1+), self-sufficient (Q2+)
V Compulsivity	Conscientious (G+), controlled (Q_3+)

(adapted from Meyer et al., 1988, p. 318)

4.2.3.5 Standardisation of the 16-PF

Hand-scoring stencils on the answer sheet obtain the raw scores for each of the first and second order factors. When done by hand, it involves assigning the specific number of points for each item that is answered in the scored direction (Graham and Lilly, 1984). The score for each item in Form A is 0, 1 or 2 (Cattell et al., 1992). However, for the scale dealing with intelligence in Form A, only one point is given for an item answered

in the scored direction. A raw score for each scale is then determined by adding scores for all items included in the scale.

Raw scores of the first order factors are then transformed to specialised standard scores called sten scores. These scores range from 1 to 10 and have a mean of 5.5 and a standard deviation of 2. The transformation of raw scores is accomplished by referring to the norm table included in a supplement to the 16-PF Handbook (Graham and Lilly, 1984). For the purpose of this research, the following norm tables were used: the male, general public (average age ± 20 years) norm table for the men and the female, general public (rural population, average age ± 35 years) for the women.

As mentioned, the second order factors are comprised of certain first order factors. Thus, the scores of the second order factors are obtained by placing the sten scores of the relevant first order factors in a calculation specially designed for the second order factor. According to Cattell (1992) a sten between 8-10 on the 16-PF test can be described as a high score. Furthermore, a high score is indicated by a positive (+) sign. On the other hand, a sten between 1-3 corresponds with a negative (-) sign and indicate a low score.

Normative data are provided for individual forms and combinations of forms. The norm groups are large and range from 400 to 4 000 with attention given to geographic location, family income, age and race. Data are presented for three major groups namely, high school juniors and seniors, college students and general adult population. For each of these groups, data are presented separately for men and women (Graham and Lilly, 1984). After sten scores are obtained for various scales, they can be plotted on a profile sheet to facilitate comparisons and interpretation (Graham and Lilly, 1984).

Furthermore, an important step in scoring is to obtain scores for the three validity scales namely, the:

- Motivational Distortion Scale
- Faking Bad Scale
- Random Scale

High scores on the Motivational Distortion Scale indicate that " ...the subject may have been 'faking good' in taking the test and caution should be exercised in interpreting the resulting scores" (Graham and Lilly, 1984, p. 251). The same applies to high scores on the Faking Bad Scale.

High scores on the Random Scale suggest that the subject responded to items without reading them and considering their content. Thus, scores resulting from such an approach to the test should not be interpreted (Graham and Lilly, 1984).

4.2.3.6 Reliability of the 16-PF

Cattell et al. (1992) reports two types of reliability coefficients. The first type, namely the dependability coefficient, is "the correlation between two administrations on the same test when the lapse of time is insufficient for people themselves to change with respect to what is being measured" (Cattell et al., 1992, p. 30). The time lapse between the two administrations are therefore, 4-7 days and reliability coefficients range form .58 to .83 for Form A with the median at .79 (Graham and Lilly, 1984).

Test-retest reliability coefficients decrease as the test-retest interval increases (Graham and Lilly, 1984). Therefore, the second reliability coefficient, namely the stability coefficient, is measured with an interval of about two months (Smit, 1980). Cattell et al. (1992) report that the stability coefficients range form .35 to .85 (median: .66) for Form A. With a four year test-retest interval coefficients for Form A range from .28 to .63 (median: .49) for men and from .21 to .64 (median: .51) for women (Du Toit, 1991; Graham and Lilly, 1984).

Careful examination of these reliability data suggests that some of the 16-PF scales produce consistently higher reliability coefficients than others (Graham and Lilly, 1984). However, Smit (1980) states that the scales with lower reliability coefficients are still higher than the coefficients of other personality tests.

4.2.3.7 Validity of the 16-PF

According to Cattell et al. (1992) there are three main forms of validity relevant to the 16-PF:

a) Direct Concept Validity (i.e. construct-validity) involves how well a scale agrees or correlates with the concept found in the source trait, which it sets out to measure (Graham and Lilly, 1984). Concept Validity coefficients range from .53 to .94 for a combination of the two longer forms, namely A and B (Cattell et al., 1992).

b) Concrete validity (i.e. criterion-validity) is the "correlations of the scale with many concrete performances [such as] school achievement, clinical diagnosis, recovery from delinquency and pilot success." (Cattell et al., 1992, p. 34). According to Du Toit (1991) these validity coefficients range from .53 to .94.

c) Indirect or circumstantial concept validity answers the question: " How well do the correlations of this test, with a representative sample of concrete natural criteria (or other diverse psychological variables) agree with those which the conceptual criterion itself is expected to have with these relevant variables?" (Cattell et al., 1992, p. 38). Indirect concept validity coefficients range from .63 to .96 (Cattell et al., 1992).

Although the reliability - and validity - data are not yet available for South African populations, the above information ensures the 16-PF as a reliable and valid measuring instrument.

4.3 Sample

The sample population used for the purpose of this research consisted of trainers in the Cape Peninsula. Organisations that employ trainers were contacted and recruited to participate in the research. Because of the difficulty in finding trainers, the sample was assembled by chance (Huysamen, 1993). Thus, a trainer who was willing to participate was immediately incorporated in the study. Altogether 19 organisations co-operated, resulting in a sample of 96 individuals.

4.4 Data collection

4.4.1 The procedure

In order to investigate the hypothesis set out in chapter three, the next six steps were followed. Firstly, several organisations were contacted in order to assemble a statistical significant sample size of trainers willing to participate in the research. Appointments were made in order to allow the researcher to supervise all the trainers when completing the three questionnaires. Supervision was necessary since the 16-PF is a C-level psychometric test that requires the researcher to be present.

Secondly, the diagnosis of the training styles of the trainers took place. The diagnosis was accomplished by using a measuring instrument specially developed for this purpose. The instrument, namely the Training Style Inventory, relies on the principles of pedagogy and andragogy. The questionnaire was used to classify trainers according to one of the five developed training styles (section 2.5.3). Consequently, the third step involved the grouping of trainers according to their specific training style, which evidently resulted in five groups of trainers.

Fourthly, along with the Training Style Inventory, the trainers also completed a personality measuring instrument, namely the 16-PF of Cattell. The completion of the 16-PF made it possible to conduct the fifth

step, namely the constructing of an average personality profile for each type of training style. Lastly, the statistical analysis was done in order to investigate the statistical hypotheses set out in section 4.5.

4.4.2 The exclusion of trainees

The methodology used made it easier and more economical not to include trainees in the diagnosis of the training styles of the trainers. When making use of trainees, an important problem can occur. It could be that during a specific training course, a trainer mostly used his/her inferior training style in order to adapt to the situation. Therefore, trainees could interpret the inferior training style as the trainer's preference style.

The implication of this is that the specific trainer ends up in the wrong category concerning his/her training style. Therefore, although the trainer used Style B (andragogy: preference; pedagogy: inferior) and mostly moved in his/her inferior training style, trainees might diagnose the trainer as using Style E (pedagogy: preference). Evidently this could lead to a distorted average personality profile for each type of training style. Therefore, for the purpose of this study, trainers had the opportunity to diagnose their own training style.

4.5 Research design

For the purpose of this study, two underlying research designs were used to examine the validity of the research hypotheses. Both the quasi-experimental design and the correlation design can be grouped under the heading of ex post facto research designs. In this type of research design, the researcher uses neither random assignment nor experimental manipulation of the independent variable(s) (Research Methodology, 2000). Appropriate statistical hypotheses were subsequently formulated

for each of the two research designs. These designs will be explained shortly.

The quasi-experimental design can be described as having the essential structure of experimental designs. However, this design lacks the definitive features of random assignment and manipulation (Research Methodology, 2000). The reason for using this design was partly explained in section 4.3. Furthermore, the independent variable namely training style was just observed and no manipulation occurred. Accordingly, the first and second statistical hypothesis resulted from the quasi-experimental design.

The second design, namely the correlation design, is a design "... in which both the independent variable(s) and the dependent variable(s) are only observed across individuals to establish the extent to which the co-vary." (Research Methodology, 2000, p. 2). Within this design the independent or predictor variables are the five second order personality factors while training style operates as the dependent variable. Hypotheses $H_0$3, $H_0$4, $H_0$5, $H_0$6 and $H_0$7 embody this type of research design.

4.5.1 Statistical analysis

The conceptual research hypothesis was investigated via the above-mentioned research designs by formulating and testing the following hypotheses:

$$\mathbf{H_0 1:}\ \mu_{X1}=\begin{pmatrix}\mu_{Y1}\\ \mu_{Y2}\\ \mu_{Y3}\\ \mu_{Y4}\\ \mu_{Y5}\\ \mu_{Y6}\\ \mu_{Y7}\\ \mu_{Y8}\\ \mu_{Y9}\\ \mu_{Y10}\\ \mu_{Y11}\\ \mu_{Y12}\\ \mu_{Y13}\\ \mu_{Y14}\\ \mu_{Y15}\\ \mu_{Y16}\end{pmatrix}=\mu_{X2}=\begin{pmatrix}\mu_{Y1}\\ \mu_{Y2}\\ \mu_{Y3}\\ \mu_{Y4}\\ \mu_{Y5}\\ \mu_{Y6}\\ \mu_{Y7}\\ \mu_{Y8}\\ \mu_{Y9}\\ \mu_{Y10}\\ \mu_{Y11}\\ \mu_{Y12}\\ \mu_{Y13}\\ \mu_{Y14}\\ \mu_{Y15}\\ \mu_{Y16}\end{pmatrix}=\mu_{X3}=\begin{pmatrix}\mu_{Y1}\\ \mu_{Y2}\\ \mu_{Y3}\\ \mu_{Y4}\\ \mu_{Y5}\\ \mu_{Y6}\\ \mu_{Y7}\\ \mu_{Y8}\\ \mu_{Y9}\\ \mu_{Y10}\\ \mu_{Y11}\\ \mu_{Y12}\\ \mu_{Y13}\\ \mu_{Y14}\\ \mu_{Y15}\\ \mu_{Y16}\end{pmatrix}=\mu_{X4}=\begin{pmatrix}\mu_{Y1}\\ \mu_{Y2}\\ \mu_{Y3}\\ \mu_{Y4}\\ \mu_{Y5}\\ \mu_{Y6}\\ \mu_{Y7}\\ \mu_{Y8}\\ \mu_{Y9}\\ \mu_{Y10}\\ \mu_{Y11}\\ \mu_{Y12}\\ \mu_{Y13}\\ \mu_{Y14}\\ \mu_{Y15}\\ \mu_{Y16}\end{pmatrix}=\mu_{X5}=\begin{pmatrix}\mu_{Y1}\\ \mu_{Y2}\\ \mu_{Y3}\\ \mu_{Y4}\\ \mu_{Y5}\\ \mu_{Y6}\\ \mu_{Y7}\\ \mu_{Y8}\\ \mu_{Y9}\\ \mu_{Y10}\\ \mu_{Y11}\\ \mu_{Y12}\\ \mu_{Y13}\\ \mu_{Y14}\\ \mu_{Y15}\\ \mu_{Y16}\end{pmatrix}$$

$$\mathbf{H_a 1:}\ \mu_{X1} \neq \mu_{X2} \neq \mu_{X3} \neq \mu_{X4} \neq \mu_{X5}$$

$$\mathbf{H_0 2:}\ \mu_{X1}=\begin{pmatrix}\mu_{YQI}\\ \mu_{YQII}\\ \mu_{YQIII}\\ \mu_{YQIV}\\ \mu_{YQV}\end{pmatrix}=\mu_{X2}=\begin{pmatrix}\mu_{YQI}\\ \mu_{YQII}\\ \mu_{YQIII}\\ \mu_{YQIV}\\ \mu_{YQV}\end{pmatrix}=\mu_{X3}=\begin{pmatrix}\mu_{YQI}\\ \mu_{YQII}\\ \mu_{YQIII}\\ \mu_{YQIV}\\ \mu_{YQV}\end{pmatrix}=\mu_{X4}=\begin{pmatrix}\mu_{YQI}\\ \mu_{YQII}\\ \mu_{YQIII}\\ \mu_{YQIV}\\ \mu_{YQV}\end{pmatrix}=\mu_{X5}=\begin{pmatrix}\mu_{YQI}\\ \mu_{YQII}\\ \mu_{YQIII}\\ \mu_{YQIV}\\ \mu_{YQV}\end{pmatrix}$$

$$\mathbf{H_a 2:}\ \mu_{X1} \neq \mu_{X2} \neq \mu_{X3} \neq \mu_{X4} \neq \mu_{X5}$$

$$\mathbf{H_0 3:}\ \beta_1[X_1] = 0 \mid \beta_2[X_2] \neq 0, \beta_3[X_3] \neq 0, \beta_4[X_4] \neq 0, \beta_5[X_5] \neq 0$$

$$\mathbf{H_a 3:}\ \beta_1[X_1] \neq 0 \mid \beta_2[X_2] \neq 0, \beta_3[X_3] \neq 0, \beta_4[X_4] \neq 0, \beta_5[X_5] \neq 0$$

$H_0$4: $\beta_2[X_2] = 0 \mid \beta_1[X_1] \neq 0, \beta_3[X_3] \neq 0, \beta_4[X_4] \neq 0, \beta_5[X_5] \neq 0$

H_a4: $\beta_2[X_2] \neq 0 \mid \beta_1[X_1] \neq 0, \beta_3[X_3] \neq 0, \beta_4[X_4] \neq 0, \beta_5[X_5] \neq 0$

$H_0$5: $\beta_3[X_3] = 0 \mid \beta_1[X_1] \neq 0, \beta_2[X_2] \neq 0, \beta_4[X_4] \neq 0, \beta_5[X_5] \neq 0$

H_a5: $\beta_3[X_3] \neq 0 \mid \beta_1[X_1] \neq 0, \beta_2[X_2] \neq 0, \beta_4[X_4] \neq 0, \beta_5[X_5] \neq 0$

$H_0$6: $\beta_4[X_4] = 0 \mid \beta_1[X_1] \neq 0, \beta_2[X_2] \neq 0, \beta_3[X_3] \neq 0, \beta_5[X_5] \neq 0$

H_a6: $\beta_4[X_4] \neq 0 \mid \beta_1[X_1] \neq 0, \beta_2[X_2] \neq 0, \beta_3[X_3] \neq 0, \beta_5[X_5] \neq 0$

$H_0$7: $\beta_5[X_5] = 0 \mid \beta_1[X_1] \neq 0, \beta_2[X_2] \neq 0, \beta_3[X_3] \neq 0, \beta_4[X_4] \neq 0$

H_a7: $\beta_5[X_5] \neq 0 \mid \beta_1[X_1] \neq 0, \beta_2[X_2] \neq 0, \beta_3[X_3] \neq 0, \beta_4[X_4] \neq 0$

4.5.1.1 Statistical analysis of Hypothesis $H_0$1

The first statistical hypothesis flows from the quasi-experimental research design. The statistical analysis of hypothesis $H_0$1 will be conducted by means of a multiple analysis of variance (MANCOVA) within the Statistical Package for the Social Sciences (SPSS) and SAS computer program (SAS Institute, 1991; SPSS, 1998). For the purpose of this hypothesis, the sixteen dependent variables are the sixteen first order personality factors (Y_ι; ι = 1,2....., 16) identified by the 16-PF. The independent variable is the training style (X_ι; ι = 1,2....., 5) of the trainers identified by the Training Style Inventory.

The rejection of $H_0$1 will indicate that the personality profiles of trainers with different training styles differ significantly on one ore more first order personality dimensions. If this is the case, uni-variate analysis of variance (ANOVAS), ANCOVAS as well as post hoc comparisons will be used to determine where the differences in Y_ι occur. Thus, these subsequent statistical procedures will indicate on which of the 16 first order personality factors personality differences occur across which training styles.

4.5.1.2 Statistical analysis of Hypothesis $H_0$2

The second hypothesis also flows from the quasi-experimental research design. The same statistical procedures used to analyse $H_0$1, were applied to examine this hypothesis. Although the independent variable is also identified as the training style of trainers, the dependent variables are the five second order personality factors as specified by the 16-PF.

4.5.1.3 Statistical analysis of Hypotheses $H_0$3 - $H_0$7

These five hypotheses flow from the correlation research design and were tested by fitting a spesific model on the sample data. The following model was fitted by means of a standard multiple regression analysis:

$$E(Y|X_i) = \alpha + \beta_1[X_1] + \beta_2[X_2] + \beta_3[X_3] + \beta_4[X_4] + \beta_5[X_5]$$

Rejection of any one of these hypotheses would imply that the second order personality factor concerned does significantly explain variance in training style in a model containing the remaining four second order factors. Thus, the rejection of these hypotheses would imply that the second order factor significantly explains unique training style variance not explained by the remaining four second order factors.

4.6 Summary

In contrast with chapter two, which described the theoretical side of this study, chapter four captured the more practical issues. Therefore, chapter four dealt with the way in which the necessary data was collected, as well as the statistical aspect of this research. Since the data was gathered by means of questionnaires, attention was given to the elements of the three measuring instruments namely the Demographic Questionnaire, the Training Style Inventory and the 16-PF.

Following the discussion of the measuring instruments, was the layout of the participants of this study. Consideration was also given to the process that was systematically employed in order to assemble the necessary data. Still moving within the context of this process, a section was conceded to the exclusion of the input of the trainees.

Lastly, this chapter included the statistical hypotheses that formed the focus of this study. The seven statistical hypotheses, as well as the dependent and independent variable for each hypothesis, were established. Afterwards the methods used to investigate the gathered data were explained. Thus, chapter four only explained the methods of analysis used and why these specific ones were chosen. Therefore, chapter 5 captures the statistical processing of the data, giving the results and explanations of significant findings.

CHAPTER 5

RESULTS AND INTERPRETATION

5.1 Introduction

The purpose of this study is to determine whether a systematic relationship exists between training style and personality. The methodology in terms of which this objective is to be achieved was described in chapter four. This chapter reports the results in order to attend to this objective.

The two questionnaires used for the collection of the data were explained in the previous chapter. The personality measure of Cattell was chosen because it is internationally recognised and has a proven reliability and validity. On the other hand, the measuring instrument for training style was developed for the purpose of this study.

The chapter begins with the analysis of the reliability of the Training Style Inventory. This analysis flows over in the discussion of the testing of the assumption of normality as explained in chapter four. The rest of the chapter deals with the sample demographics and measurement results obtained by means of the research methodology described in the previous chapter. This chapter concludes with the testing of the statistical hypotheses as set out in chapter four.

5.2 Reliability of the Training Style Inventory

A total of 96 completed Training Style Inventories were used in this research, representing a response rate of 100%. The Training Style Inventory was item-analysed through the SPSS Reliability procedure (SPSS, 1998). The item analysis helped to identify and eliminate items not contributing to an internally consistent description of the one-dimensional training orientation construct.

The initial reliability coefficient of the Training Style Inventory was 0.7737. However, the item total correlation suggested the elimination of items 15, 19, 27, 31, 35 and 42. The item analysis was subsequently repeated on the reduced item set and resulted in the elimination of a further 2 items namely, items 16 and 24. The elimination of the eight items resulted in an alpha of 0.8317. Lastly, a third item analysis run revealed that the elimination of item 26 would lead to a further improvement in alpha.

Thus, in total, 9 items were deleted from the original questionnaire resulting in a final reliability coefficient of 0.8339. This value is regarded as satisfactory. The results of the final item analysis are shown in Tables 8 and 9.

Table 8: Results of the item analysis on the Training Style Inventory

Items	Mean	Std Dev	Cases
1. Criteria	3.1563	1.0695	96.0
2. Discipli	2.6979	1.2742	96.0
3. Risk	3.5521	0.9827	96.0
4. Values	2.2292	1.0709	96.0
5. Provid	2.9167	1.0328	96.0
6. Begin	1.6771	0.6727	96.0
7. Prior	4.1771	0.9403	96.0
8. Assess	3.5833	1.0728	96.0
9. Lectur	3.5000	1.1239	96.0
10. Physic	4.0625	1.0241	96.0
11. Objec	3.9896	0.9347	96.0
12. Readi	4.1250	0.9974	96.0
13. Ought	2.0938	1.0768	96.0
14. Topics	2.6667	1.2283	96.0
15. Dialogue	4.2708	0.8269	96.0
16. Adults	4.2604	0.7433	96.0
17. Experi	3.9167	0.9478	96.0
18. Discus	3.4896	1.0052	96.0
19. Rate	3.1563	1.0986	96.0
20. Techniq	4.2083	0.8816	96.0
21. Contro	3.6563	0.9271	96.0
22. Tests	3.1354	1.1843	96.0
23. Growth	3.6667	0.9478	96.0
24. Abilit	4.0417	0.9052	96.0
25. Motives	3.2396	1.0538	96.0
26. Problems	3.8333	0.7903	96.0
27. Logic	2.6563	1.0139	96.0
28. Apply	4.2604	0.7711	96.0
29. Comp	2.7813	1.1716	96.0
30. Compe	2.5938	1.2361	96.0
31. Material	4.3333	0.7769	96.0
32. Relate	4.3021	0.8720	96.0
33. Every	3.5313	1.0458	96.0

Table 9: Results of the reliability analysis of the Training Style Inventory

Statistics for scale			
Mean	**Variance**	**Std Dev**	**N**
113.7604	173.0052	13.153	33

Item Means					
Mean	**Minimum**	**Maximum**	**Range**	**Max/Min**	**Variance**
3.4473	1.6771	4.3333	2.6563	2.5839	0.5195

Item Variances					
Mean	**Minimum**	**Maximum**	**Range**	**Max/Min**	**Variance**
1.0032	0.4525	1.6236	1.1711	3.5878	0.0854

Reliability Coefficients 33 items
Alpha = 0.8339 Standarised item alpha = 0.8381

5.3 Assessing the normality of the training style measure

In section 4.2.2.4, the assumption was made that orientation to training style should be normally distributed. After the elimination of problematic items in the questionnaire, the distribution of training style total scores was subsequently tested for normality. The normal probability plot shown in figure 6 indicates a sample distribution approximating normality. The tenability of the normality assumption was examined by testing the null hypothesis that the training orientation observations constitute a random sample from a normally distributed population.

The calculated value of the Shapiro-Wilk test statistic W = 0,97 was statistically insignificant ($p > 0.05$). Thus, the assumption that the population is normally distributed can not be rejected (figure 6).

Consequently, the total scores were transformed to normalised standard scores as indicated in figure 7.

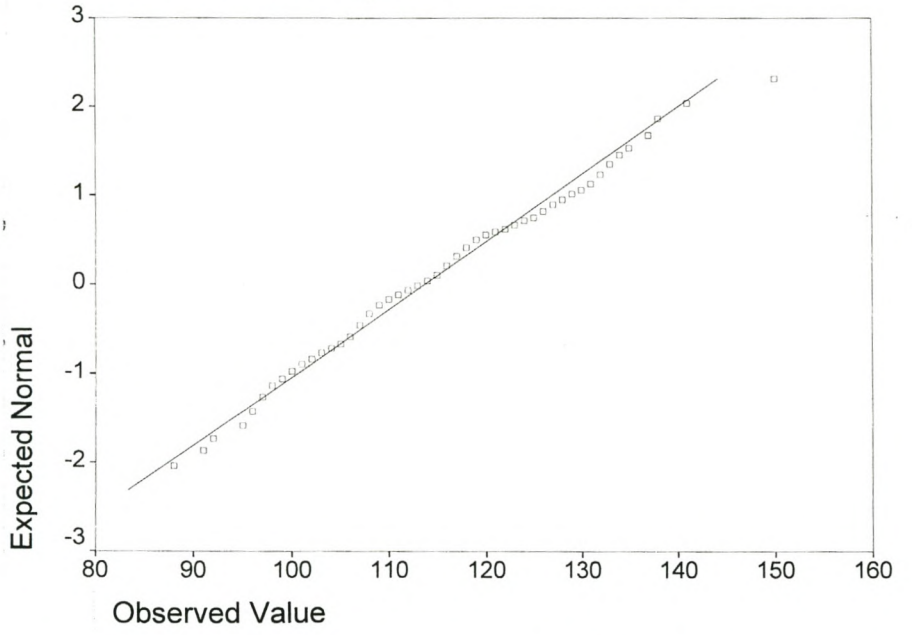


Figure 6: Normal probability plot of training style total score

Stem	Leaf	N
24	8	1
22		
20	2	1
18	2	1
16	22	2
14	87	2
12	5588	4
10	3755	4
8	333066	6
6	27726	5
4	22200069	8
2	11112222	8
0	40000	5
0	72227111	8
-2	2222222	7
-4	999666666	9
-6	77277	5
-8	999055	6
-10	557	3
-12	888	3
-14	55	2
-16	822	3
-18	2	1
-20	2	1
-22		
-24	8	1

Figure 7: Normalised standard scores

As stated in section 4.2.2.4, the participants would each be assigned to a specific training style based on the assumption that training orientation follows a normal distribution. The classification scheme is illustrated in figure 8. The following table, table 10, indicates the detail of the actual classification of the trainers. This classification is based on the stem and leaf plot as depicted in figure 7. Because the sample of 96 individuals only approximates the normal distribution, the actual numbers of trainers classified as styles A, B and C differ slightly from the expected numbers based on the normality assumption.

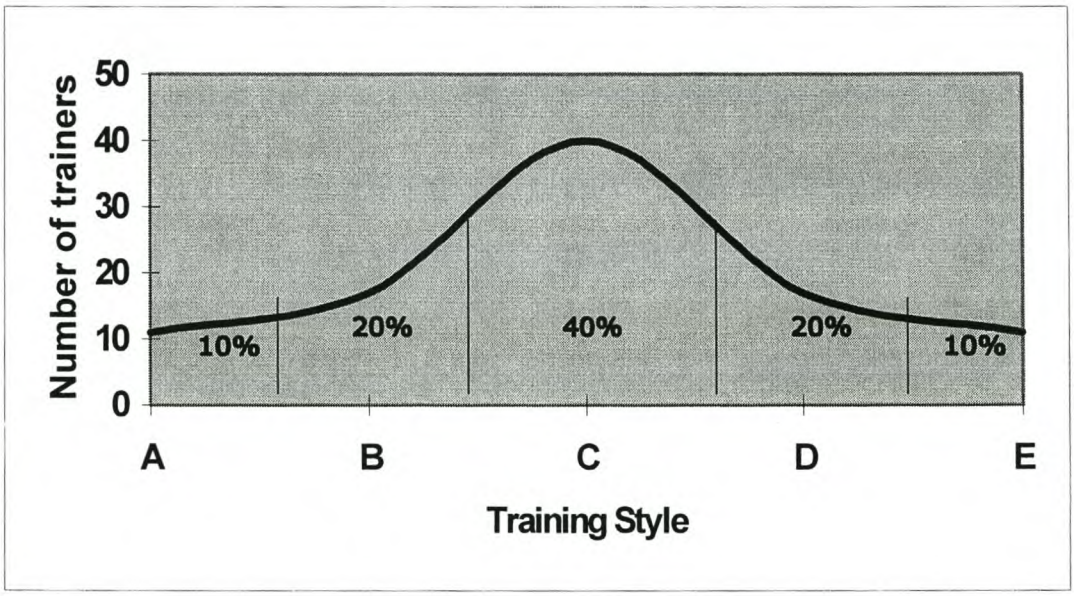


Figure 8: The classification of trainers according to training style

Table 10: The detailed classification of trainers according to training style

Training Style	Percentage of normal distribution	Range of total scores	Amount of trainers
Style A	10%	85-97	11
Style B	20%	98-106	17
Style C	40%	107-119	40
Style D	20%	120-131	19
Style E	10%	132-150	9

5.4 Demographic Data

5.4.1 Gender and age

In total, 96 individuals participated in this study of which 60.5% (60) were men and 37.5% (36) were women (figure 9). The average age of the two genders was very similar with the average age for the men being 39.9 and for the women 38.4. Figure 10 shows the age distribution across four categories.

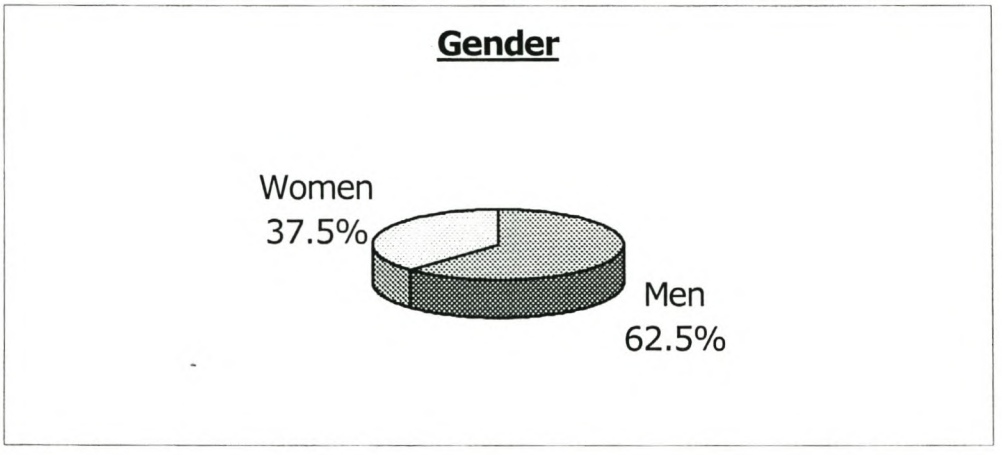


Figure 9: Gender of respondents

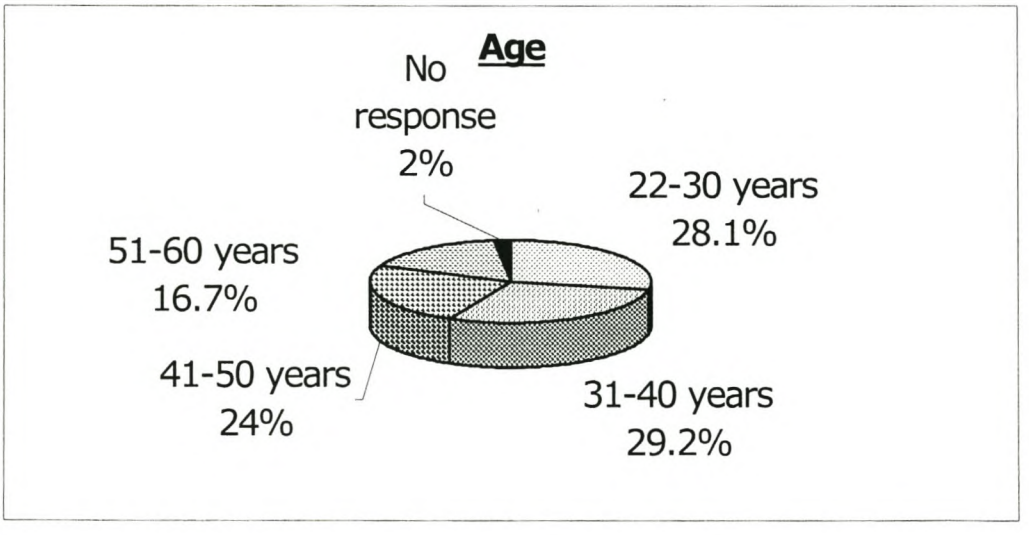


Figure 10: Age of the respondents

5.4.2 Qualifications

Most of the respondents have finished high school, while 6% only advanced to Grade 10. In turn, 26% of the participating individuals have obtained a bachelors degree while merely 22.9% of the respondents received a post graduate degree.

Table 11: The highest qualifications of the respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Grade 10	6	6.3	6.3	6.3
Grade 12	29	30.2	30.2	36.5
Diploma	14	14.6	14.6	51.0
B. Degree	25	26.0	26.0	77.1
H. Degree	14	14.6	14.6	91.7
M. Degree	7	7.3	7.3	99.7
Doctorate	1.0	1.0	1.0	100.0
Total	96	100	100	

5.4.3 Years in training

Almost 50% of the sample have been training for a period of five years or less. In turn, only 6.3% of the respondents have been training for more than 25 years. Figure 11 shows the number of years spent in the training field according to six categories.

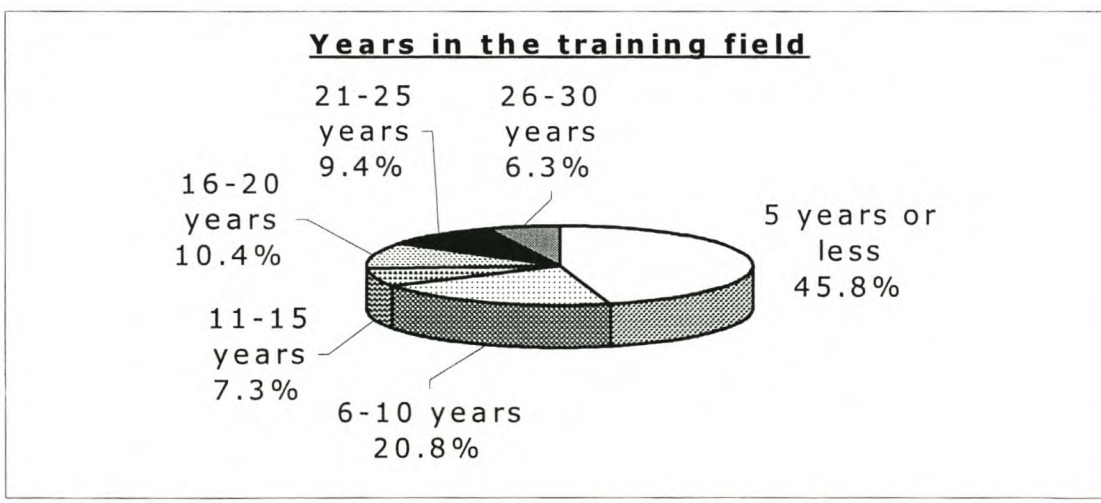


Figure 11: Number of years in the training field

According to table 12, fifty percent of all women respondents have training experience of five years or less as opposed to the 43% of men falling in this category. Furthermore, table 12 indicates that the majority of those having training experience between 26 and 30 years are men (66,6%).

Table 12: Crosstabulation between years in the training field and gender

Years in training field	Male	Female	Total
5 years or less	26	18	44
6-10 years	14	6	20
11-15 years	3	4	7
16-20 years	7	3	10
21-25 years	6	3	9
26-30 years	4	2	6
Total	60	36	96

5.4.4. Type of organisation

A total of nine types of organisations were identified (table 13) in this study. The National Defence Force contributed 27.1% of the sample, while the Western Cape Education Department was responsible for 21.9%. Financial services together with the training organisations, contributed a further 38.6%.

Table 13: Types of organisations identified in the study

	Frequency	Percent	Valid Percent	Cumulative Percent
1. Training	11	11.5	11.5	11.5
2. Manufacturing	8	8.3	8.3	19.8
3. Marketing & Refining	8	8.3	8.3	28.1
4. Retail	1	1.0	1.0	29.2
5. Financial services	16	16.7	16.7	45.8
6.Telecommunication	2	2.1	2.1	47.9
7. Local Government	3	3.1	3.1	51.0
8. Western Cape Education Department	21.0	21.9	21.9	72.9
9. National Defence Force	26	27.1	27.1	100.0
Total	96	100	100	

The majority (40%) of the men are active in the National Defence Force, while most of the women (44%) are concentrated in the Western Cape Education Department (table 14).

Table 14: Crosstabulation between type of organisation and gender

Type of organisation	Male	Female	Total
1. Training	8	3	11
2. Manufacturing	7	1	8
3. Market. & ref.	3	5	8
4. Retail	1		1
5. Financial services	8	8	16
6. Telecom.	2		2
7. Local Government	2	1	3
8. WCED	5	16	21
9. NDF	24	2	26
Total	60	36	96

5.4.5 Subject area

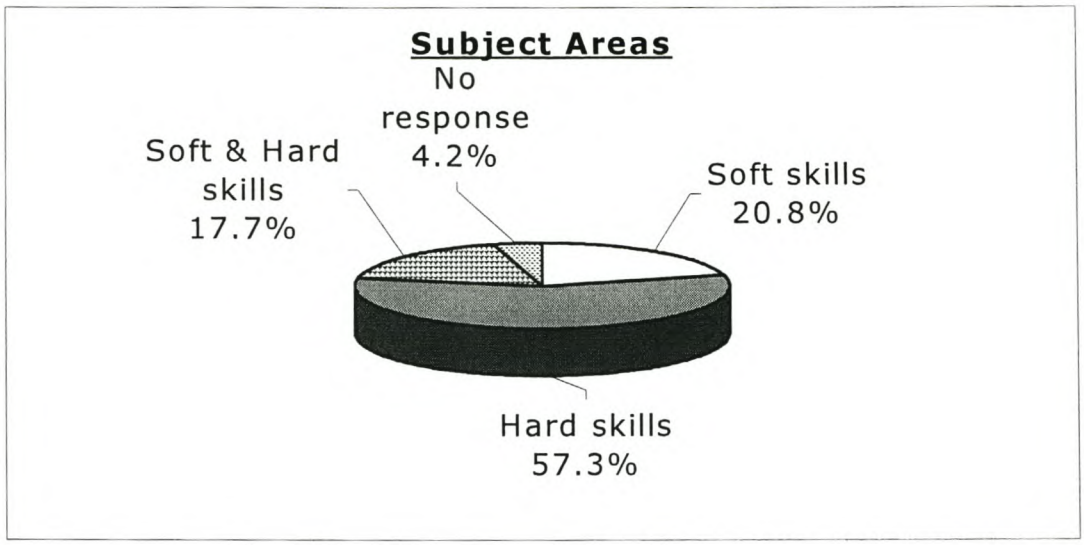


Figure 12: Subject areas within the training field

Figure 12 shows that most of the respondents (57,3%) are responsible for the training of hard skills. Furthermore, table 15 indicates that the majority of trainers involved in the training of hard skills are men (60%). Likewise the majority of those who do more combined training (soft and hard skills) are men (76.4%). Conversely, 55% of the men are involved in the training of hard skills while 61 % of women are involved in hard skills training.

Table 15: Crosstabulation between subject area and gender

Subject Area	Male	Female	Total
Soft skills	10	10	20
Hard skills	33	22	55
Soft and Hard skills	13	4	17
Missing value	4		4
Total	60	36	96

5.5 Testing the hypotheses

5.5.1 Testing hypothesis $H_0 1$

In order to test the first statistical hypothesis explained in chapter four, an average personality profile was required for each of the five training styles. Tables 16-20 depict the descriptive statistics characterising the personality profiles of the five training styles. The mean scores for each of the 16 first order personality factors resulted in the average personality profile for every training style as shown in figure 13.

Table 16: The descriptive statistics characterising the personality profile of Style A

Personality factors	N	Minimum	Maximum	Mean	Std. Dev.
Factor A	11	3.00	8.00	5.60	1.6348
Factor B	11	3.00	8.00	4.70	1.6181
Factor C	11	1.00	9.00	5.10	2.3856
Factor E	11	4.00	9.00	7.00	1.8141
Factor F	11	3.00	8.00	6.10	1.7581
Factor G	11	2.00	8.00	6.00	1.5492
Factor H	11	4.00	10.00	6.60	1.9117
Factor I	11	2.00	8.00	4.80	2.1361
Factor L	11	2.00	9.00	5.20	1.8878
Factor M	11	3.00	8.00	5.90	1.4460
Factor N	11	3.00	10.00	5.20	2.1826
Factor O	11	2.00	9.00	5.20	2.6765
Factor Q1	11	3.00	9.00	6.50	2.0181
Factor Q2	11	2.00	7.00	4.40	1.9117
Factor Q3	11	3.00	9.00	5.90	1.7003
Factor Q4	11	2.00	9.00	5.80	2.2279

Table 17: The descriptive statistics characterising the personality profile of Style B

Personality factors	N	Minimum	Maximum	Mean	Std. Dev.
Factor A	17	3.00	10.00	5.70	1.8630
Factor B	17	2.00	9.00	5.10	2.0147
Factor C	17	2.00	10.00	5.90	1.9963
Factor E	17	3.00	10.00	7.50	1.9078
Factor F	17	2.00	10.00	6.40	2.7600
Factor G	17	3.00	8.00	6.20	1.5129
Factor H	17	5.00	10.00	7.50	1.5459
Factor I	17	3.00	10.00	5.60	1.9982
Factor L	17	1.00	9.00	5.50	2.4525
Factor M	17	3.00	8.00	5.80	1.4246
Factor N	17	1.00	8.00	4.60	2.1778
Factor O	17	1.00	9.00	5.10	2.5117
Factor Q1	17	3.00	9.00	5.70	1.3933
Factor Q2	17	1.00	10.00	5.00	2.1506
Factor Q3	17	3.00	10.00	5.90	2.1057
Factor Q4	17	2.00	10.00	5.60	2.5995

Table 18: The descriptive statistics characterising the personality profile of Style C

Personality factors	N	Minimum	Maximum	Mean	Std. Dev.
Factor A	40	1.00	10.00	6.00	2.4108
Factor B	40	1.00	10.00	6.20	1.9375
Factor C	40	2.00	10.00	5.90	1.7170
Factor E	40	2.00	10.00	6.80	2.3005
Factor F	40	1.00	10.00	6.70	2.4025
Factor G	40	1.00	10.00	5.90	1.7887
Factor H	40	2.00	10.00	7.40	2.2175
Factor I	40	3.00	10.00	5.80	1.9839
Factor L	40	1.00	8.00	4.90	1.6406
Factor M	40	1.00	10.00	5.70	2.0555
Factor N	40	1.00	9.00	5.20	1.9242
Factor O	40	1.00	9.00	4.40	1.8931
Factor Q1	40	1.00	10.00	5.20	2.3911
Factor Q2	40	1.00	10.00	4.90	2.3148
Factor Q3	40	1.00	10.00	5.60	2.3199
Factor Q4	40	1.00	9.00	5.30	1.8701

Table 19: The descriptive statistics characterising the personality profile of Style D

Personality factors	N	Minimum	Maximum	Mean	Std. Dev.
Factor A	19	2.00	10.00	6.90	2.3780
Factor B	19	3.00	10.00	6.50	1.8064
Factor C	19	5.00	10.00	6.90	1.5802
Factor E	19	4.00	10.00	7.30	2.0831
Factor F	19	1.00	10.00	7.10	2.8572
Factor G	19	1.00	10.00	5.60	2.3145
Factor H	19	2.00	10.00	8.30	2.3296
Factor I	19	3.00	9.00	6.40	1.8016
Factor L	19	1.00	8.00	3.80	1.9026
Factor M	19	4.00	8.00	5.80	1.1822
Factor N	19	1.00	8.00	4.90	2.2230
Factor O	19	1.00	7.00	3.40	1.8016
Factor Q1	19	1.00	10.00	5.30	2.6213
Factor Q2	19	2.00	9.00	5.20	1.9316
Factor Q3	19	3.00	8.00	5.50	1.3486
Factor Q4	19	1.00	8.00	4.30	2.1357

Table 20: The descriptive statistics characterising the personality profile for Style E

Personality factors	N	Minimum	Maximum	Mean	Std. Dev.
Factor A	9	3.00	9.00	5.70	2.0616
Factor B	9	2.00	9.00	5.90	2.5221
Factor C	9	4.00	10.00	6.90	1.8333
Factor E	9	2.00	10.00	7.30	2.7386
Factor F	9	3.00	10.00	7.10	2.6194
Factor G	9	1.00	8.00	5.40	2.4552
Factor H	9	4.00	10.00	7.70	2.2913
Factor I	9	3.00	9.00	6.80	2.1667
Factor L	9	1.00	6.00	4.00	2.000
Factor M	9	3.00	10.00	6.40	2.1858
Factor N	9	2.00	8.00	4.40	2.0683
Factor O	9	1.00	8.00	3.70	2.3979
Factor Q1	9	2.00	9.00	6.70	2.5000
Factor Q2	9	1.00	7.00	4.30	2.4495
Factor Q3	9	1.00	9.00	5.30	2.2913
Factor Q4	9	1.00	9.00	4.70	2.3979

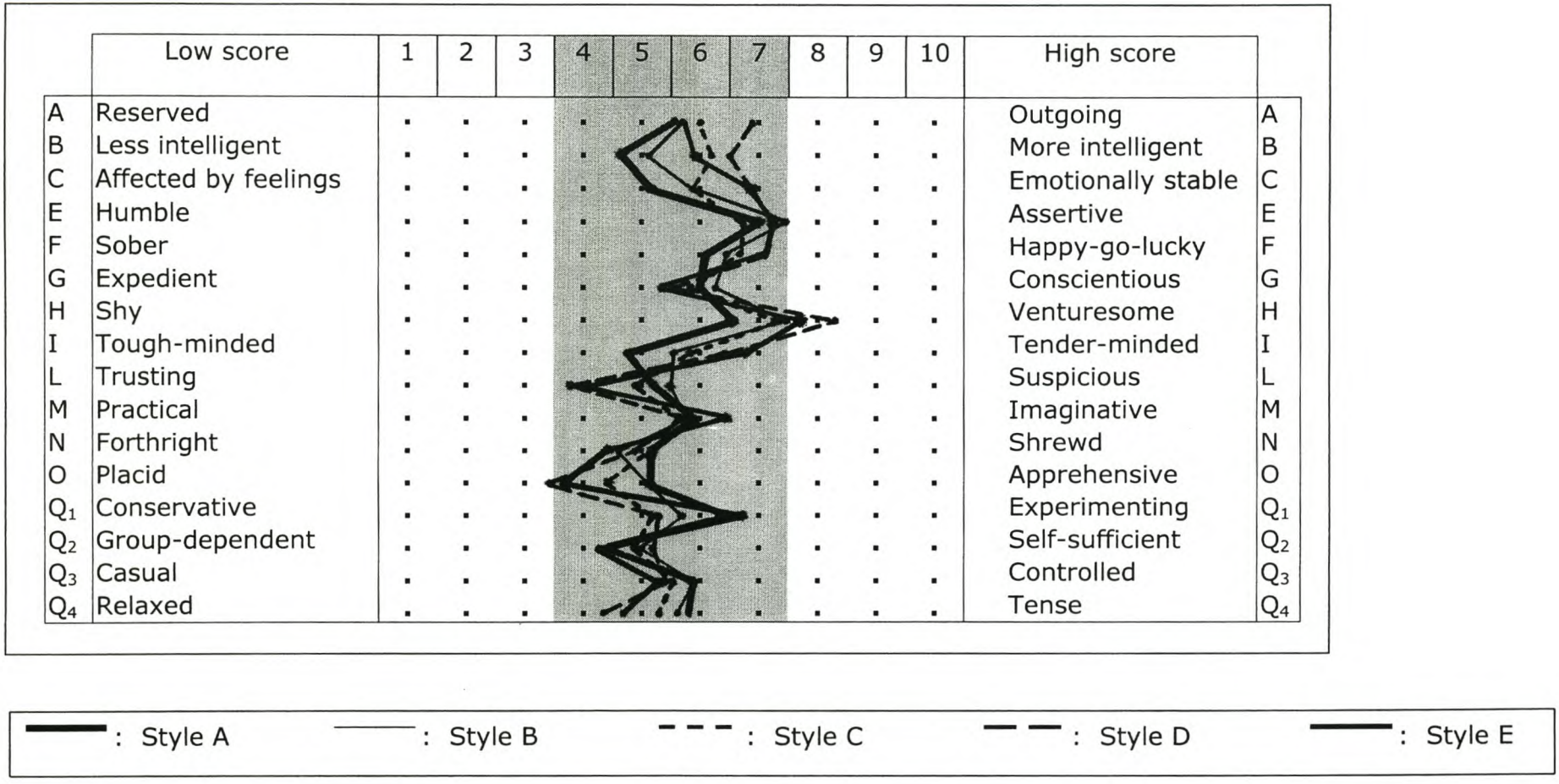


Figure 13: Personality profiles for the five training styles defined in terms of the sixteen first order personality factors

In order to test $H_0 1$, a one-way multiple analysis of variance (MANOVA) was performed. As is evident from table 21, $H_0 1$ cannot be rejected ($p>0.05$). Therefore, the null hypothesis, namely that there are no significant differences between personality profiles of the different training styles can not be rejected.

Table 21: Results from the MANOVA on the effect of training style on the sixteen first order personality factors.

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept:	**Pillai's Trace**	0.994	736.530	16.00	76.00	0.000
	Wilks' Lambda	0.006	736.530	16.00	76.00	0.000
	Hotelling's Trace	155.059	736.530	16.00	76.00	0.000
	Roy's Largest Root	155.059	736.530	16.00	76.00	0.000
STYLES:	**Pillai's Trace**	0.603	0.876	64.00	316.000	0.736
	Wilks' Lambda	0.502	0.903	64.00	299.803	0.683
	Hotelling's Trace	0.801	0.932	64.00	298.000	0.624
	Roy's Largest Root	0.498	2.461	64.00	79.000	0.004

Subsequently, the total score on the Training Style Inventory was artificially dichotomised around the median to create only two training styles. The first training style, namely Style A represented the more pedagogic approach to training. This style consisted of the information of 49 individuals. Style B represented the more andragogic approach and consisted of the information of 47 respondents. A typical personality profile was subsequently determined for each of these two training styles.

A MANOVA was performed in order to investigate the significance of the observed differences between the two types of training styles on the vector of 16 first order personality factors. Table 22 indicates that the null hypotheses of no difference between the two vectors of first order personality means, can not be rejected ($p>0.05$). Thus, there are no statistical significant differences between the two training styles in terms of the 16 first order personality factors.

Table 22: Results from the MANOVA on the effect of training style on the sixteen first order personality factors.

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept:	Pillai's Trace	0.995	976.204	16.00	79.00	0.000
	Wilks' Lambda	0.005	976.204	16.00	79.00	0.000
	Hotelling's Trace	197.712	976.204	16.00	79.00	0.000
	Roy's Largest Root	197.712	976.204	16.00	79.00	0.000
STYLES:	Pillai's Trace	0.249	1.641	16.00	79.00	0.0774
	Wilks' Lambda	0.751	1.641	16.00	79.00	0.0774
	Hotelling's Trace	0.332	1.641	16.00	79.00	0.0774
	Roy's Largest Root	0.332	1.641	16.00	79.000	0.0774

5.5.2 Testing hypothesis $H_0 2$

As with the first statistical hypothesis set out in chapter four, the second statistical hypothesis also relates to the structure of the personality profiles associated with the five training styles. However, in this case the profile for each training style is drawn in terms of the second order personality factors. The descriptive statistics characterising the personality profiles of five training styles are given in tables 23-27. A graph depicting the five training styles' personality profiles in terms of the second order factors is shown in figure 14.

Table 23: The descriptive statistics characterising the second order personality profile of Style A

Personality factors	N	Minimum	Maximum	Mean	Std. Dev.
Factor QI	11	4.60	8.20	6.40	1.0576
Factor QII	11	2.60	8.20	5.40	1.7247
Factor QIII	11	4.00	8.30	5.60	1.4157
Factor QIV	11	3.70	8.00	5.90	1.3427
Factor QV	11	4.00	8.00	5.90	1.2340

Table 24: The descriptive statistics characterising the second order personality profile of Style B

Personality factors	N	Minimum	Maximum	Mean	Std. Dev.
Factor QI	17	4.60	9.60	6.60	1.2579
Factor QII	17	1.60	8.20	5.30	1.8894
Factor QIII	17	3.30	7.30	5.30	1.0623
Factor QIV	17	4.00	8.00	6.10	1.0543
Factor QV	17	3.50	9.00	6.10	1.4815

Table 25: The descriptive statistics characterising the second order personality profile of Style C

Personality factors	N	Minimum	Maximum	Mean	Std. Dev.
Factor QI	40	2.20	9.20	6.60	1.7391
Factor QII	40	2.00	7.60	5.00	1.3737
Factor QIII	40	2.70	7.70	5.20	1.2794
Factor QIV	40	3.30	8.70	5.70	1.0961
Factor QV	40	2.50	9.00	5.70	1.6717

Table 26: The descriptive statistics characterising the second order personality profile of Style D

Personality factors	N	Minimum	Maximum	Mean	Std. Dev.
Factor QI	19	4.00	9.20	7.10	1.3937
Factor QII	19	2.60	6.60	4.20	1.1709
Factor QIII	19	2.70	7.00	4.60	1.0548
Factor QIV	19	4.00	7.70	5.90	1.2623
Factor QV	19	2.50	8.50	5.60	1.6321

Table 27: The descriptive statistics characterising the second order personality profile of Style E

Personality factors	N	Minimum	Maximum	Mean	Std. Dev.
Factor QI	9	4.40	9.60	6.90	1.9777
Factor QII	9	2.20	7.20	4.40	1.8068
Factor QIII	9	2.70	7.00	4.70	1.3688
Factor QIV	9	5.00	8.00	6.10	0.9117
Factor QV	9	2.50	8.50	5.40	1.8838

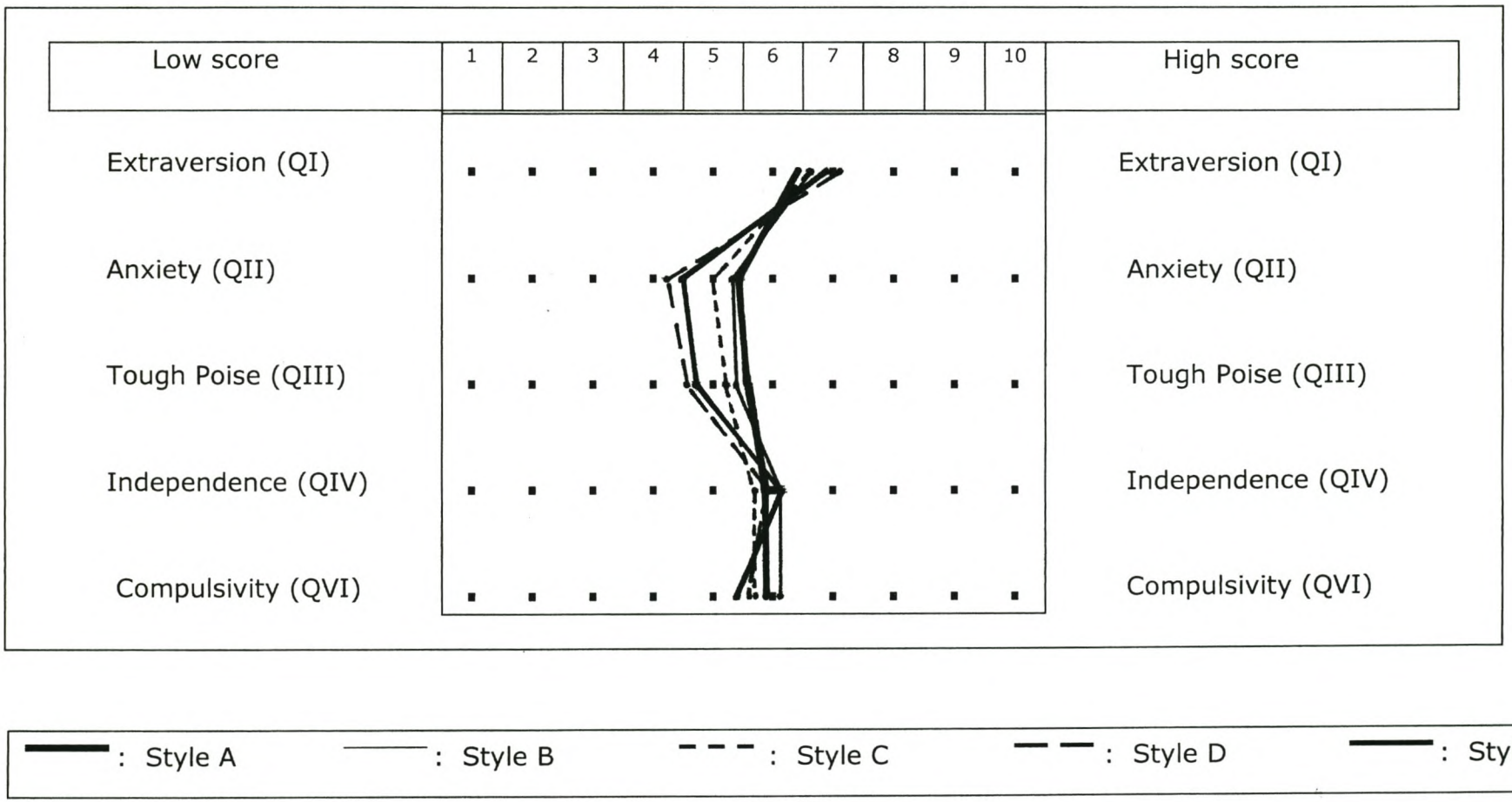


Figure 14: Personality profiles for the five training styles defined in terms of the five second order personality factors

Inspection of tables 23-27 and figure 14 suggest that the second order personality profiles associated with Style A and B as opposed to Style D and E, tend to differ on anxiety and tough poise only. The more pedagogic training styles seem to score higher on anxiety and tough poise. To test whether these sample differences are more than mere chance occurrences, the second statistical hypothesis was tested by means of a one-way MANOVA.

The results of the MANOVA on the effect of training styles on the five second order personality factors are summarised in table 28. According to these results, $H_0 2$ cannot be rejected ($p>0.05$). Therefore, the null hypothesis that states that there are no significant differences between the personality profiles (defined in terms of the second order personality factors) of the five training styles can not be rejected ($p> 0.05$).

Table 28: Results of the MANOVA on the effect of training style on the five second order personality factors.

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept:	**Pillai's Trace**	0.993	2456.104	5.00	87.00	0.000
	Wilks' Lambda	0.007	2456.104	5.00	87.00	0.000
	Hotelling's Trace	141.155	2456.104	5.00	87.00	0.000
	Roy's Largest Root	141.155	2456.104	5.00	87.00	0.000
STYLES:	**Pillai's Trace**	0.276	1.333	20.00	360.000	0.155
	Wilks' Lambda	0.734	1.418	20.00	289.496	0.112
	Hotelling's Trace	0.351	1.499	20.00	342.000	0.078
	Roy's Largest Root	0.311	5.600	5.00	90.000	0.000

The total scores achieved on the Training Style Inventory were subsequently also dichotomised to create two training styles. A MANOVA was performed to investigate the significance of differences between these two training styles on the second order factors. Table 29 indicates that the statistical null hypothesis of no training style effect on personality can be rejected ($p>0.05$). Table 30 shows that the two training styles differ significantly on the tough poise (PFQIII) scale only. The pedagogic

training style showed significantly higher tough poise than the andragogic training style.

Table 29: Results of the MANOVA on the effect of training style on the second order personality factors

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept:	Pillai's Trace	0.994	3096.938	5.00	90.00	0.000
	Wilks' Lambda	0.006	3096.938	5.00	90.00	0.000
	Hotelling's Trace	172.052	3096.938	5.00	90.00	0.000
	Roy's Largest Root	172.052	3096.938	5.00	90.00	0.000
STYLES:	Pillai's Trace	0.173	3.778	5.00	90.00	0.0038
	Wilks' Lambda	0.827	3.778	5.00	90.00	0.0038
	Hotelling's Trace	0.209	3.778	5.00	90.00	0.0038
	Roy's Largest Root	0.209	3.778	5.00	90.00	0.0038

Table 30: Results of the uni-variate ANOVA on the effect of training style on the second order personality factors

		Type III Sum of Squares	df	Mean square	F	Sig.
STYLE	PFQI	5.124	1	5.124	2.187	0.143
	PFQII	6.001	1	6.001	2.534	0.115
	PFQIII	7.833	1	7.833	5.348	0.023
	PFQIV	0.203	1	0.203	0.158	0.692
	PFQV	7.039	1	7.039	2.840	0.095

5.5.3 Testing hypotheses $H_0$3 - $H_0$7

In order to investigate if the five second order personality factors explain any variance in training style, a standard multiple regression was performed. In view of the results obtained, which are reported in table 31, hypotheses $H_0$3 and $H_0$6 cannot be rejected ($p > 0.05$). However, hypotheses $H_0$4, $H_0$5 and $H_0$7 can be rejected in favour of the alternative hypotheses ($p>0.05$).

Table 31: Results of the regression of training style on the five second order personality factors

Model		Unstandarised Coefficients		Standarised Coefficients	T	Sig.	$^{*}sr^2$	$^{**}sr^2$	$^{**}pr^2$
		B	Std. Error	Beta					
1	(Constant)	161.694	15.587		10.374	0.000			
	PFQI	-0.165	0.851	-0.019	-0.193	0.847	0.0160	0.0003	0.0003
	PFQII	-4.045	1.016	-0.477	-3.983	0.000	0.0476	0.1382	0.1495
	PFQIII	-2.227	1.027	-0.21	-2.169	0.033	0.0617	0.0412	0.0498
	PFQIV	0.412	1.114	0.035	0.370	0.712	0.0049	0.0013	0.0016
	PFQV	-3.139	0.988	-0.379	-3.178	0.002	0.1013	0.0886	0.1013
							0.2136		

Dependent variable: Total score on TSI
* Based on Type I sum of squares
** Based on Type II sum of squares

According to these findings, three of the five second order personality factors, namely anxiety (PFQII), tough poise (PFQIII) and compulsivity (PFQIV) explain unique training style variance not explained by the remaining second order factors. Thus, anxiety, tough poise and compulsivity offer unique insights in why an individual displays a certain training style.

Consequently, table 31 implies that higher sten scores for anxiety tend to correspond with lower scores on the Training Style Inventory. Thus, the tendency appears to be that the higher the sten score for anxiety, the more pedagogic the trainer will be. More specifically, an increase of one sten score on the second order anxiety scale will be accompanied by a typical decline of four units in the total score on the Training Style Inventory.

When investigating the anxiety scale it is also necessary to contemplate the correlation matrix (table 32). To measure the extent of association between various variables, Pearson's product moment correlation coefficient was computed. With regard to testing the significance of the coefficients, the level of significance for a one-tailed test was set at the 0.05 level in all instances. In some cases the correlation coefficients were

Table 32: Correlation matrix

	PFQI	PFQII	PFQIII	PFQIV	PFQV	Gender	Age	Qualification	Years	Subject	Style score	r^2
PFQI	1.000	*-0.178	*-0.213	-0.212	-0.055	**0.282	*-0.204	0.123	*-0.191	-0.057	0.127	0.0160
		0.041	0.019	0.119	0.297	0.003	0.023	0.117	0.031	0.292	0.108	
N	96	96	96	96	96	96	94	96	96	96	96	
PFQII	* -0.178	1.000	-0.039	0.150	**-0.588	*-0.202	-0.030	*-0.184	-0.035	0.077	*-0.237	0.0562
	0.41		0.352	0.072	0.000	0.024	0.387	0.037	0.367	0.229	0.010	
N	96	96	96	96	96	96	94	96	96	96	96	
PFQIII	*-0.213	-0.039	1.000	-0.028	0.145	0.091	-0.090	-0.089	0.002	0.031	**-0.243	0.0590
	0.019	0.352		0.393	0.079	0.189	0.193	0.193	0.492	0.383	0.009	
N	96	96	96	96	96	96	94	96	96	96	96	
PFQIV	-0.121	0.150	-0.028	1.000	-0.159	*-0.183	-0.080	0.004	-0.043	-0.067	0.032	0.0001
	0.119	0.072	0.393		0.061	0.037	0.218	0.485	0.34	0.259	0.378	
N	96	96	96	96	96	96	94	96	96	96	96	
PFQV	-0.055	**-0.588	0.145	-0.159	1.000	-0.043	0.003	*-0.176	0.028	-0.010	-0.134	0.0179
	0.297	0.000	0.079	0.061		0.337	0.487	0.043	0.395	0.461	0.097	
N	96	96	96	96	96	96	94	96	96	96	96	
Gender	**0.282	*-0.202	0.091	*-0.183	-0.043	1.000	-0.053	**0.316	-0.049	*-0.215	*0.195	0.0380
	0.003	0.024	0.189	0.037	0.337		0.304	0.001	0.316	0.018	0.029	
N	96	96	96	96	96	96	94	96	96	96	96	
Age	*-0.204	-0.030	-0.090	-0.080	0.003	-0.053	1.000	0.121	**0.505	0.057	*0.236	0.0557
	0.023	0.387	0.193	0.218	0.487	0.304		0.120	0.000	0.291	0.022	
N	96	96	96	96	96	96	94	96	96	96	94	
Qualif	0.123	*-0.184	-0.089	0.004	*-0.176	**0.316	0.121	1.000	**0.505	-0.083	**0.502	0.2520
	0.117	0.037	0.193	0.485	0.043	0.001	0.120		0.000	0.210	0.000	
N	96	96	96	96	96	96	94	96	96	96	96	
Years	*-0.191	-0.035	0.002	-0.043	0.028	-0.049	**0.505	**0.323	1.000	-0.028	0.138	0.0190
	0.031	0.367	0.492	0.34	0.395	0.316	0.000	0.001		0.392	0.090	
N	96	96	96	96	96	96	94	96	96	96	96	
Subject	-0.057	0.077	0.031	-0.067	-0.010	*-0.215	0.057	-0.083	-0.028	1.000	0.046	0.0020
	0.292	0.229	0.383	0.259	0.461	0.018	0.291	0.210	0.392		0.328	
N	96	96	96	96	96	96	94	96	96	96	96	
Style	0.127	*-0.237	**-0.243	0.032	-0.134	*0.195	*0.236	**0.502	0.138	0.046	1.000	
score	0.108	0.010	0.009	0.378	0.097	0.029	0.022	0.000	0.090	0.328		
N	96	96	96	96	96	96	94	96	96	96	96	

* Correlation is significant at the 0.05 level (1-tailed)

** Correlation is significant at the 0.01 level (1-tailed)

found to be significant at a higher level ($p<0.01$) and are reported as such.

According to table 32, anxiety explains 5.6% ($r^2 = 0.0562$) of the variance in training style. However, to just reflect on r^2 can ignore the possibility of mutual correlation between the predictor variables (second order factors). The last two columns in table 31 help to eliminate this problem. Table 31 indicates that the unique variance in anxiety that is not explained by the other second order personality factors, explains 13.82% (sr^2) of the total variance in training style. Furthermore, the unique variance in anxiety explains 14.95% (pr^2) of the unique variance in training style.

As for the next second order personality factor namely, tough poise, the tendency appears to be that a trainer with an andragogic training style is inclined to achieve lower sten scores on the tough poise scale than pedagogic trainers. Accordingly, the unstandarised regression coefficient in table 28 imply that an increase in one sten score on the tough poise scale is accompanied by a typical decline of two units in the training style score.

Furthermore, the correlation matrix shows that tough poise explains 5.9% ($r^2 = 0.0590$) of the variance in training style. However, as explained before, semi-partial (sr^2) - as well as partial correlation (pr^2) coefficients must also be taken into account. Thus, table 31 indicates that the unique variance in tough poise that is not explained by the remaining second order factors, explains 4.12% (sr^2) of the total variance in training style. Moreover, the unique variance in tough poise explains 4.98% (pr^2) of the unique variance in training style.

The final significant second order factor is compulsivity. The following tendency can be derived form table 31 namely, trainers that achieve high scores on the Training Style Inventory appears to score low on the compulsivity scale. More specifically, table 31 indicates that one unit

increase in the sten scores on the compulsivity scale is accompanied by a typical decline of three units in the training style score.

The correlation matrix (table 32) indicates that compulsivity explains only 1.79% (r^2 = 0.0179) of the variance in training style. On the other hand, table 31 shows that the unique variance in compulsivity that is not explained by the other second order factors, explains 8.9% (sr^2) of the total variance in training style. Lastly, the unique variance in compulsivity explains 10.13% (pr^2) of the unique variance in training style.

The regression analysis indicated only three second order factors as relevant when explaining the manifestation of training style. However, table 31 shows that the regression model comprising all five factors explains 21,4% (R^2) of the variance in training style.

In order to further extend the regression model, the demographic factors were examined for possible incorporation in the model. This was done to investigate the possibility of these demographic factors explaining additional variance in training style not explained by the personality factors. All demographic variables, accept age, were dichotomised and reduced to dummy variables for the purpose of correlation and regression analysis. The results are reported in table 33.

Table 33: Results of the regression analysis of training style on demographic factors and second order personality factors

Model	Unstandarised Coefficients		Standarised Coefficients	T	Sig.	$^{*}sr^2$	$^{**}sr^2$	$^{**}pr^2$
	B	Std. Error	Beta					
1 (Constant)	144.387	10.488		13.766	0.0001			
Qualification	7.343	2.397	0.283	3.063	0.0029	0.1895	0.0679	0.0964
Age	0.225	0.113	0.175	1.986	0.0502	0.0222	0.0285	0.0429
PFQII	-3.456	0.914	-0.414	-3.782	0.0003	0.0404	0.1035	0.1397
PFQIII	-1.952	0.906	-0.187	-2.155	0.0339	0.0487	0.0336	0.0501
PFQV	-2.702	0.922	-0.329	-2.931	0.0043	0.0622	0.0622	0.0889
						0.3631		

Dependent variable: Total score on TSI
* Based on Type I sum of squares
** Based on Type II sum of squares

According to the results in table 33, qualification and age explains additional variance in training style not explained by the personality factors already included in the model. Therefore, a trainer's qualification and age offer unique insights in why an individual displays a certain training style over and above those offered by the previously discussed second order personality factors.

Table 33 firstly indicates that a high qualification tends to correspond with a high training style score. Thus, the higher the trainer's qualification, the more andragogic the trainer tends to be. Specifically, table 33 shows that that trainers with a bachelors degree qualification or higher will, on average, score seven units higher on the Training Style Inventory than trainers with a diploma or a lower qualification.

Furthermore, table 32 shows that qualification explains 25,5% (r^2 = 0.2505) of the variance in training style. Since r^2 gives no indication of the possible correlation between the independent variables, it is necessary to incorporate semi-partial - and partial correlation coefficients in the interpretation. Table 33 indicates that the unique variance in qualification not explained by the remaining factors, explains 6,8% (sr^2) of the total

variance in training style. Moreover, the unique variance in qualification explains 9,6% (pr^2) of the unique variance in training style.

Secondly, the results show that the higher the trainer's age, the higher the training style score. Thus the tendency appears to be that older trainers are more andragogic in their approach to training. The unstandarised coefficients in table 33 indicate that a unit increase in age is accompanied by a typical increase of only 0.2 units in the total score on the Training Style Inventory.

The correlation matrix (table 32) shows that age explains 5,6% (r^2 = 0.0557) of the variance in training style. Moreover, the regression analysis (table 33) indicates that the unique variance in age not explained by the other factors, explains 2,9% (sr^2) of the total variance in training style. Furthermore, the unique variance in age explains 4,3% (pr^2) of the unique variance in training style.

Lastly, the sum of the squared semi-partial correlations based on Type I sum of squares (R^2) indicates that the weighted linear contribution of qualification, age, anxiety, tough poise and compulsivity explains 36,3% of the variance in training style.

5.6 Summary

This chapter dealt with the analysis of the data gathered by means of the procedure described in chapter four. Chapter five started with the description of the reliability testing of the measures of the Training Style Inventory. Several items were discarded which resulted in a final Cronbach alpha of 0.8339.

The assumption of normality of the Training Style Inventory total scores was tested and could not be rejected. The training style scores of the sample were subsequently normalised. Trainers were classified in one of

five training styles based on the normalised standard scores. Furthermore, the demographic profile of the sample was discussed.

The rest of the chapter presented the testing of the statistical hypotheses as explained in the previous chapter. Several statistical procedures were incorporated to attend to the testing of hypotheses.

The study found limited support for the hypothesis that there exists a systematic relationship between personality and training style. The analysis based on a quasi-experimental research design produced disappointing results, which failed to corroborate the existence of this relationship. On the other hand, the analysis based on the correlation research design revealed more positive results. This study suggests that three second-order personality factors namely anxiety, tough poise and compulsivity along with the qualification and age of a trainer offer important insights into why trainers display a certain training style.

CHAPTER 6

CONCLUSION

6.1 Summary

The objective of the study was to investigate the systematic relationship between the training style of a trainer and his/her personality. This investigation was prompted by the progressive importance of training in South African organisations.

The South African Government's changing attitude towards training resulted in the establishment of the National Skills Authority (NSA) along with the Sector Education and Training Authorities (SETA's). The National Skills Authority is central to the training issue in South Africa. On the one hand it is responsible for advising the Minister of Labour on aspects such as a national skills development policy and the allocation of subsidies from the National Skills Fund. On the other hand, it must liase with the SETA's on the national skills development policy and the national skills development strategy (Republic of South Africa, 1998).

One of the important functions of a SETA is to collect and disburse the skills development levies in its sector. This levy on companies' total remuneration will, according to Mr. Tito Mboweni, former minister of labour, encourage the creation of a more stable training culture in South Africa (Beeld, 1997). The skills development levies were implemented to motivate organisations to attend more seriously to the training of their employees. Organisations will be required to pay 0.5% of their total remuneration in the form of a skills development levy as from 1 April 2000. As from 1 April 2001 a skills development levy of 1% will be the standard requirement (Republic of South Africa, 1999). Organisations that do not adhere to this legislation could be fined to pay a substantial amount. Thus, the skills development levy makes it evident that

organisations should, from now on, regard the training of their employees as a definite priority.

However, training can only exist with someone performing the training. Thus, the role of the trainer also becomes an increasingly important function within organisations. In performing the training, a trainer evidently demonstrates a certain training style. Unfortunately, the training style of trainers is an issue in the field of training that has not received much attention. Furthermore, Conti (1985) states that knowledge and awareness of one's own training style is important to ensure the effectiveness of training. Awareness regarding training style can help trainers to identify areas of strength and areas of future development.

In this study, five training styles were developed and because of the lack of suitable measuring instruments to assist in the identification of training style, a questionnaire was developed in order to classify trainers according to their training style. Thus, the Training Style Inventory is able to classify a trainer according to one of five training styles.

Moreover, it has been suggested that the personality of a trainer could be regarded as an influential factor concerning training style. Personality is one of the dimensions of individuals that some organisations test as part of their recruitment and selection processes in order to ensure that the best candidate is chosen for the job. Since Poon Teng Fatt (1993, p. 21) proposes that "...trainers show their personalities through the way they teach" it was fundamental to this research to establish a systematic relationship between personality and training style. This could then lead to the use of personality profiles when selecting new trainers.

A sample of 96 trainers participated in the study and three questionnaires were administered. The trainers were classified into five groups according to their training style by means of the Training Style Inventory. The personality measuring instrument namely the 16-PF was used to establish an average personality profile for each of the five training styles.

Personality profiles were drawn for each training style in terms of first-order personality factors as well as second-order personality factors. These profiles were then used to establish if a systematic relationship exists between the personality of a trainer and his/her training style. Furthermore, demographic information was also collected and analysed with regard to their contribution to the manifestation of a particular training style.

The study found limited support for the hypothesis that there exists a systematic relationship between personality and training style. The analysis based on a quasi-experimental research design produced disappointing results, which failed to corroborate the existence of this relationship. On the other hand, the analysis based on the correlation research design revealed more positive results. This study suggests that three second-order personality factors namely anxiety, tough poise and compulsivity along with the qualification and age of a trainer offer important insights in why trainers display a certain training style.

6.2 Implications of the study

One of the dynamic activities in organisations is the recruitment and selection processes that result in employment. These ongoing processes enable organisations to exist and to survive in today's competitive labour market. Since hiring costs are enormous, several organisations incorporate personality tests as part of the recruitment and selection processes to assess the candidates as thoroughly as possible beforehand.

Furthermore, with the help of the 16-PF several personality profiles have been established for different occupations. These profiles are then regarded as the most suitable profile for a specific occupation. Consequently, organisations can identify the most suitable candidate by means of comparing personality profiles. Thus, the applications of personality profiles make the selection process more sophisticated.

Therefore, in chapter three it was anticipated that the construction of personality profiles for trainers with different training styles could possibly refine the selection and employment of new trainers if:

- a systematic relationship between training style and personality could be demonstrated and;
- personality would explain a sufficient proportion of the variance in training style.

However, the study failed to establish sufficient evidence to conclude the existence of a systematic relationship between personality and training style. Thus, trainers with different training styles do not significantly differ in their personality profiles. It is therefore not possible to construct personality profiles for trainers with different training styles in order for organisations to employ the most suitable candidate.

A further implication arises out of the construction of the first South African training style measuring instrument. The measurement of training style can make a fundamental impact on training in organisations. If trainers can evaluate their training style by means of the Training Style Inventory, it would indicate the trainer's strengths as well as weaknesses concerning his/her training style. Therefore, it will enable the counselling of trainers to be much more practical in terms of addressing problematic issues. The Training Style Inventory can, in addition, indicate specific aspects of the training situation on which the trainer can improve to make the training more effective.

6.3 Recommendations for future research

The first recommendation concerns the validity of the Training Style Inventory. One of the main contributions of this study was the development of a reliable training style measurement. However, although the questionnaire shows satisfactory reliability, this does not ensure validity. Thus, it is recommended that in order to promote the further use

of the questionnaire, the validity of the Training Style Inventory measures should be examined.

The second recommendation also relates to the validity of the Training Style Inventory. For the purpose of this study, training style was treated as a one-dimensional factor. It is also stated in chapter four that the seven factors that underlie the items in the questionnaire were regarded as first-order factors that combine in one second-order factor namely training style. However, it is recommended that the factorial validity of the instrument should be examined by means of factor analysis and/or structural equation modelling (LISREL).

Should empirical support be found for the above-mentioned measurement model, the possible existence of a relationship between training style and personality should be re-examined. This should be done by means of regressing a weighted linear combination of training factors on a weighted linear combination of personality factors. Canonical correlation analysis should be considered as the appropriate analysis technique.

Finally, the updating of the norm tables of the 16-PF for form A is recommended. The norm tables used to construct the average personality profiles for the five training styles can be viewed as outdated. These norm tables were constructed in 1960 and should be applied with caution.

BIBLIOGRAPHY

Alberts, P.P. (1988). Characteristics of the post-school learner. South African journal of higher education, 2(2), 57-59.

Baird, L., Schneier, C.E. & Laird, D. (1985). The training and development sourcebook. Massachusetts: Human Resource Development Press.

Baron, R.A. (1996). Essentials of Psychology. Needham Heights: Allyn and Bacon.

Beeld. (1997, 3 September). Omstrede opleidingsheffing in nuwe wetgewing vervat. p. 3.

Behr, A.L. (1987a). Styles of lecturing. In G.J. Jacobs (Ed.), Leer en Dosseerstyle: implikasies vir tersiêre onderwys (pp. 26-31). Johannesburg: Buro vir Universiteitsonderwys, Randse Afrikaanse Universiteit.

Behr, A.L. (1987b). What is teaching effectiveness? In G.J. Jacobs (Ed.), Leer en Dosseerstyle: implikasies vir tersiêre onderwys (pp. 32-40). Johannesburg: Buro vir Universiteitsonderwys, Randse Afrikaanse Universiteit.

Blazzard, N.N. & Hasenauer, J.A. (1996). Practical Tips On Compliance Programs. Sales News & Trends, Jul, 18.

Briggs-Myers, I. & McCaulley, M.H. (1985). Manual: A guide to the development and use of the Myers-Briggs type indicator. Palo Alto: Consulting Psychologists Press Inc.

Broadbent, B. (1998). The elite instructor. OHS Canada, 14(2), 72, 74.

Cattell, R.B., Eber, H.W. & Tatsuoka, M.M. (1992). Handbook for the Sixteen Personality Factor Questionnaire (16-PF). Illinois: Institute for Personality and Ability Testing, Inc.

Caudron, S. (1997). Hire for Attitude: it's who they are that counts. Workforce, Aug, 21-22.

Cilliers, H.J. (1996). Trainer competency and psychological optimality. Unpublished masters thesis, University of South Africa, Pretoria.

Clarke, D. (1999). Learning, Performance and Training Glossary - N to Z. World Wide Web (http://www.nwlink.com/~donclark/hrd/glossar2.html.).

Conti, G.J. (1985). Assessing teaching style in adult education: How and why. Lifelong learning, 8(8), 7-11, 28.

Conti, G.J. & Welborn, R.B. (1986). Teaching-learning styles and the adult learner. Lifelong learning, 9(8), 20-25.

Craig, R.L. (Ed) (1987). Training and Development Handbook (3rd ed.). New York: McGraw-Hill.

Cross, K.P. (1981). Adults as learners. California: Jossey-Bass Publisher.

Daines, J., Daines, C. & Graham, B. (1994). Adult learning Adult teaching (3rd ed.). Oxford: The Alden Press.

Dastoor, B. (1993). Training 101. Training and Development, 47(6), 17-20.

Davenport, J & Davenport, J.A. (1985a). Andragogical-pedagogical orientations of adult learners: Research results and practice recommendations. Lifelong Learning, 9(1), 6-8.

Davenport, J & Davenport, J.A. (1985b). A Chronology and analysis of the andragogy dabate. Adult Education Quarterley, 35, 152-159.

Divita, S. (1997). How to interpret personalities of job candidates. Marketing News, 31(13), 17.

Dunn, R.S. & Dunn, K.J. (1979). Should they...can they...be matched. Educational Leadership, 36, 238-244.

Du Plooy, W.J. (1991). Die didaktiese kontinuum. Educare, 20(2), 27-41.

Du Toit, J. (1991). Enkele persoonlikheidstrekke van 'n groep jong volwassenes uit verskillende gesinstrukture. Unpublished masters thesis, University of Stellenbosch, Stellenbosch.

Edwards, R., Hanson, A. & Raggatt, P. (1996). Boundaries to learning. London: Routledge.

Erdle, S., Murray, H.G. & Rushton, J.P. (1985). Personality, Classroom Behavior and Student Ratings of College Teaching Effectiveness: A Path Analysis. Journal of Educational Psychology, 77(4), 394-395.

Fischer, B.B. & Fischer, L. (1979). Styles in teaching and learning. Educational Leadership, 36, 245-254.

Fox, G. (Ed) (1989). Essential English Dictionary. Great Britain: Glasgow.

Geaney, M.M. (1995). The right skills for the job. Computing Canada, 21(24), 52.

Graham, J.R. & Lilly, R.S. (1984). Psychological Testing. Englewood Cliffs: Prentice-Hall Inc.

Grupe, F.H. & Connolly, F.W. (1995). Grownups Are Different: Computer Training for Adult Learners. Journal of Systems Management, 46(1), 58-64.

Hadley, H. (1975). Development of an instrument tot determine adult educator's orientations: Andragogical or pedagogical. Unpublished doctoral thesis, Boston University, Boston.

Hancock, S. (1998). Psychometric testing. Supply Management, 3(4), 30-31.

Harmse, H.J. (1981). Pedagogiek: deel 3. Durban: Butterworth & Co. (Publishers) Ltd.

Havenga, A.J. (1987). Die struktuur van die didakties-andragogiese. Unpublished doctoral thesis, University of Port Elizabeth, Port Elizabeth.

Hay, J. (1992). Transactional analysis for trainers. London: McGraw-Hill Ltd.

Heimlich J.E. & Norland, E. (1994). Developing Teaching Style in Adult Education. San Francisco: Jossey-Bass Publishers.

Hersey, P. & Blanchard, K.H. (1977). Management of organizational behavior: Utilizing. Englewood Cliffs: Prentice-Hall Inc.

Hiemstra, R. & Sisco, B. (1990). Individualizing Instruction: making learning personal. San Francisco: Jossey-Bass Publishers.

Huysamen, G.K. (1993). Metodologie vir die sosiale en gedragswetenskappe. Durban: Southern Boekuitgewers (Edms.) Bpk.

Ingalls, J.D. (1973). A trainers guide to andragogy. Washington: U.S. Government Printing Office.

Ironside, D.J. (1989). Concepts and Definitions. In C.J. Titmus (Ed.), Lifelong education for adults: An international handbook (p. 13-18). Oxford: Pergamon Press.

Jacobs, G.J. (1989). Akademiese middelvlak bestuur aan Suid Afrikaanse universiteite; die universiteit as instelling: aard, wese, doel en toekomsuitdagings. Unpublised doctoral thesis, Randse Afrikaanse Universiteit, Johannesburg.

Kamp, J. & Krause, T.R. (1997). Selecting Safe Employees: A Behavioral Science Perspective. Proffesional Safety, 42(4), 24.

Katz, M. (1994). From training to learning. People dynamics, 12(8), 37.

Knowles, M. S. (1970). The modern practice of adult education: Andragogy Versus Pedagogy. New York: Association Press.

Knowles, M.S. (1978). The adult learner: A neglected species (2nd ed.). Texas: Gulf Publishing Company.

Knowles, M.S. (1979). Malcolm Knowles on... . Training and Development Journal, 33(12), 40-42.

Knowles, M.S. (1980). The modern practice of adult education: from pedagogy to andragogy. Chicago: Association Press.

Knowles, M.S. (1984). Andragogy in action. San Francisco: Jossey-Bass Inc.

Knowles, M.S. (1987). Adult Learning. In R.L. Craig (Ed.), Training and Development Handbook (3rd ed.) (pp. 168-179). New York: McGraw-Hill.

Knowles, M.S. (1995). Designs for adult learning. Virginia: American Society for Training and Development.

Landman, W.A., Van der Merwe, I.J.M., Pitout, D.N., Smith, A.G. & Windell, J.H.J. (1990). Teacher's handbook for education. Pretoria: Academica.

Marshak, R.J. (1983). What's between Pedagogy and Andragogy? Training and Development Journal, 37(10), 80-81.

McCullough, R.C. (1987). Professional Development. In R.L. Craig (Ed.), Training and Development Handbook (3rd ed.) (pp. 35-40). New York: McGraw-Hill.

Merriam, S.B. & Caffarella, R.S. (1991). Learning in adulthood: A comprehensive guide. San Francisco: Jossey-Bass Publishers.

Merriam, S.B. & Cunningham, P.M. (1989). Handbook of adult and continuing education. San Francisco: Jossey-Bass Publishers.

Meyer, W.F., Moore, C. & Viljoen, H.G. (1988). Persoonlikheidsteorieë. Isando: Lexicon Uitgewers (Eiendoms) Beperk.

Miller, T. & Furnham, A. (1998). Character assignation. People Management, 4(7), 52-53.

Mischel, W. (1976). Introduction to personality. USA: Holt, Tinehart and Winston, Inc.

Möller, A.T. (1993). Perspektiewe oor persoonlikheid. Durban: Butterworth Uitgewers (Edms) Bpk.

Möller, A.T. (1995). Perspectives on personality. Durban: Butterworth Publishers (Pty) Ltd..

Monteith, J.L. de K. (1987). Faktore wat doeltreffende leer beïnvloed. In G.J. Jacobs (Ed.), Leer en Dosseerstyle: implikasies vir tersiêre onderwys (p. 6-12). Johannesburg: Buro vir Universiteitsonderwys, Randse Afrikaanse Universiteit.

Nadler, L. & Wiggs, G.D. (1986). Managing human resource development. San Francisco: Jossey-Bass Publishers.

Nellmapius, E. (1992). Adult learners: recognising the importance and the differences. Human Resource Management, 8(8), 34-35.

Newton, E. S. (1977). Andragogy: Understanding the adult as a learner. Journal of Reading, Feb., 361-362.

Oppenheim A.N. (1992). Questionnaire Design, Interviewing and Attitude Measurement. London: Wellington House.

Plug, C., Louw, D.A.P., Gouws, L.A. & Meyer, W.F. (1997). Verklarende en vertalende sielkundewoordeboek. Johannesburg: Heinemann.

Poon Teng Fatt, J. (1993). Learning styles in training. Industrial and Commercial Training, 25(9), 17-23.

Prior, J.K. (Ed.) (1994). Gower Handbook of training and development (2nd ed.). England: Gower Publishing Limited.

Quenk, N.L. (1993). Beside ourselves: Our hidden personality in everyday life. California: Davies-Black Publishing.

Quenk, N.L. (1996). In the grip: our hidden personality. Palo Alto: Consulting Psychologist Press.

Reed, J. (1993). Training 101. Training and Development, 47(6), 22.

Republic of South Africa (RSA) (1998). Skills Development Act (Act no. 97 of 1998). Government Gazette, 401(19420).

Republic of South Africa (RSA) (1999). Skills Development Levies Act (Act no. 9 of 1999). Government Gazette, 406(19984).

Research Methodology (2000). Unpublished class notes (Research Methodology 778/788), University of Stellenbosch.

Rinke, W.J. (1985). Holistic Education: An Answer? Training and Development Journal, 39(8), 67.

Robinson, R.D. (1994). Helping adults learn and change. Wisconsin: Omnibook.

Rogers, A. (1986). Teaching Adults. Philadelphia: Open University Press.

Rogers, A. (1996). Teaching Adults (2nd ed.). Philadelphia: Open University Press.

Rose, C. (1997). Psychology takes the stand. Marketing, 15 May, 8-9.

Rough, J. (1994). Measuring training from a new science perspective. Journal for Quality & Participation, 17(6), 12-16.

Russ, R. (1994). Creative Training Styles: Finding the right fit. Training & Development, 48(6), 46.

SAS Institute. (1991). SAS/STAT user's guide, release 6.03 edition. Cary, NC: SAS Institute Inc.

Schreuder, Y. (1995). Die sielkundige implikasies van regstellende aksie. Unpublished masters thesis, University of Stellenbosch, Stellenbosch.

Schofield, H. (1972). Assessment and testing: an introduction. London: George Allenand UNWIN Ltd.

Smit, G.J. (1980). Psigometrika. Pretoria: HAUM.

SPSS. (1990). SPSS-X user's guide. Chicago: Juta.

Stebler, M. (1997). Soft skills and hard questions. People Management, 3(11), 20-24.

Swart, H. (1997, 2 Oktober). Salarisheffing sal sowat R2 miljard inbring. Die Burger, p. 17.

Thompson, T.C. (1997). Learning styles and teaching styles: Who should adapt to whom. Business Communication Quarterley, 60(2), 125-126.

Travers, R.M.W. (Ed) (1973). Second Handbook of research on teaching. USA: Rand McNally & Company.

Tucker, S. (1998). Avoid picking the square pegs. Management-Auckland, 45(2), 78.

Walklin, L. (1990). Teaching and Learning in Further and Adult Education. Great Britain: Stanley Thornes (Publishers) Ltd.

Westen, D. (1996). Psychology: mind, brain and culture. Canada: John Wiley & Sons, Inc.

Zastrau, J.M.A. (1986). Die meting van die styl van die opleier as groepfasiliteerder. Unpublished masters thesis, Randse Afrikaanse Universiteit, Johannesburg.

Zemke, R & Zemke, S. (1995). Adult learning: what do we know for sure? Training, 32(6), 31-40.

Zimbardo, P., McDermott, M., Jansz, J. & Metaal, N. (1995). Psychology: A European Text. Hammersmith: HarperCollins Publishers Ltd.

APPENDIX A

Demographic questionnaire

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1 2

DEMOGRAPHIC QUESTIONNAIRE

Please indicate what your answer is by making a cross (x) in the appropriate box or write it down in the space provided. Please ignore the boxes at the right-hand side of the questionnaire.

For office only use

1. Gender:

Male	1	
Female	2	3

2. Age: _____ 4-5

3. Your highest qualification:

Std. 8/Grade 10	1	
Matric/Grade 12	2	
Diploma	3	
B. Degree	4	
H. Degree	5	
M. Degree	6	
Doctorate	7	6

4. Years of experience in the field of training:

5 years or less	1	
6-10 years	2	
11-15 years	3	
16-20 years	4	
21-25 years	5	
26-30 years	6	
31-35 years	7	
36 years or more	8	☐ 7

5. For research purposes it would be appreciated if you would indicate your race by marking the appropriate box below:

White	1	
Coloured	2	
Black	3	
Asian	4	☐ 8

6. Please write down the type of organisation you are currently working for: _____

7. Please write down the special subject areas that you do the most training in: _____

_____

_____

_____

_____

Thank you

APPENDIX B

Training Style Inventory

1	2

TRAINING STYLE INVENTORY

his is a questionnaire that measures the training style of trainers. Since it is not a test there are o correct or incorrect answers. Therefore, please consider each statement independently and then nswer according to your immediate reaction. In order to describe your typical training behaviour as ccurately as possible, you must choose one of the following options by making a cross (x) in the ppropriate box:

ever: You never display the behaviour in question.
eldom: You seldomly display the behaviour in question.
ometimes: You act according to the learning content, the level of the trainees and your experience.
requently: You frequently display the behaviour in question.
lways: You always display the behaviour in question.

	Never	Seldom	Sometimes	Frequently	Always	
I involve trainees in determining the criteria for evaluating their performance during training.						
I apply disciplinary measures.						
I permit risk-taking as part of the learning process.						
I encourage trainees to accept the values of our society.						
I provide knowledge rather than acting as a guide towards knowledge.						
I keep to the training objectives that were determined at the beginning of the programme.						
I participate when trainees assess their training needs as a group.						
I regard lecturing as the most effective method for presenting my subject material to the trainees.						
I arrange the physical environment to facilitate interaction among trainees.						
). I help trainees develop short-term as well as long-term objectives.						
1. I take into account the trainees' readiness when planning training units.						
2. I motivate trainees to learn what I believe they ought to know.						
3. I plan learning opportunities to take into account the trainees' prior experiences.						

	Never	Seldom	Sometimes	Frequently	Always	
4. I allow trainees to participate in deciding which topics will be covered during training.						
5. I determine the objectives of a training programme.						
6. I make the decisions about what knowledge and skills should be learned.						
7. I encourage dialogue among trainees.						
8. I utilise the knowledge and skills that most adults already possess to achieve training objectives.						
9. I use what established practice has indicated that adults need to know as my chief criteria for planning learning opportunities.						
0. I permit experimenting as part of the learning process.						
1. I have individual discussions to help trainees identify their specific training needs.						
2. I let each trainee work at his/her own rate regardless o of time it takes him/her to learn a new concept.						
3. I use a variety of training techniques.						
4. I maintain a well-disciplined training venue to minimize the factors which could interfere with the learning process.						
5. I allow the discussion of controversial subjects that involve value judgements.						
6. I allow the trainees to take periodic breaks during training.						
7. I personally choose the techniques by which the necessary information is communicated to the trainees.						
8. I use written tests as my chief method of evaluating trainees' progress.						
9. I plan activities that will promote each trainee's growth from dependence on others to greater independence.						
0. I determine my instructional objectives in accordance with the training group's abilities and needs.						
1. I decide how the chosen knowledge and skills should be learned.						
2. I allow a trainee's motives for participating in continuing education to be a major determinant in the planning of learning objectives.						

	Never	Seldom	Sometimes	Frequently	Always	
3. I have the trainees identify their own problems that need to be solved.						
4. I arrange my training material logically rather than in terms of trainees' readiness to learn.						
5. I select all the training material and activities provided.						
6. I construct learning opportunities that enable trainees to apply the new knowledge and skills during the training session.						
7. I measure a trainee's educational growth by comparing total achievement to expected performance as measured by standardised tests.						
8. I encourage competition among trainees.						
9. I use a variety of training materials.						
0. I help trainees to relate new learning to prior experiences.						
1. I organise adult learning episodes according to problems that trainees encounter in everyday life.						
2. I decide when during the training programme, the chosen knowledge and skills should be learned.						

1	
2	
3	
Total	